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PROTO-LOLOISH TONES

DAVID BRADLEY

ABSTRACT

Recent discussion of tonogenesis has shown what kinds of development in the pitch and contour realization of tone are likely or possible. It is now possible to make hypotheses about the phonetic values of reconstructed tone categories. In this paper, pitch values are proposed for Proto-Loloish tone categories, and the developments from the Proto-Loloish tone system to those of various attested Loloish languages are traced. Some insights into the process of tonogenesis, and the Proto-Sino-Tibetan tone system, are gained.

1. TONOGENESIS

In this paper, the relative pitch values of tones are represented with Chao (1930) tone-letters. These allow a five-step division of the pitch range, 1 (lowest) to 5 (highest). Level tones can be represented with two identical pitch-numbers; e.g. 55, high-level. Contour tones can be represented with pitch-numbers giving beginning, middle if necessary, and final pitches; e.g. 51, high-to-low falling; 313, mid falling-rising. In most tone systems, this transcription is narrower than necessary; but languages contrasting five level tones do exist. Chao proposes that short tones should be represented with one pitch-number, e.g. 1, short-low (level). In the area under consideration, short vs. long distinctions are usually correlated with other supresegmental or segmental distinctions: short tones occur in stop-final, laryngealized, or otherwise constricted syllables. There are also short contour tones, difficult to represent with one pitch-number.

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Therefore, I use two pitch-numbers, and indicate with a postscript -s a final stop; and -c a constriction or laryngealization of the vowel; e.g. 21s, half-low-to-low-falling with final stop; 33c, mid-level with vowel constriction.

Many excellent articles on tonogenesis, the process of tone development, have appeared — especially in the last few years. Haudricourt, in several pioneering articles (1954, 1961), suggests two basic conditioning factors that may lead to the development of tone: syllable-initial consonants condition pitch differences, and syllable-final consonants of some kinds condition contour differences. Then, if the segmental conditioning factors are lost, the pitch and contour differences may remain and become solely tone differences. Specifically, syllables with voiced initials may develop lower pitch, and syllables with voiceless initials may develop higher pitch. Syllables with glottal-stop finals may develop rising contour, and syllables with fricative finals, especially [h], may develop falling contour.

There are many examples of tone developments conditioned by larynx activity during syllable-initial consonants.[1] Even non-tonal languages show a tendency to higher pitch in voiceless-initial syllables, and lower pitch in voiceless-initial syllables.[2] The articulatory reasons for this correlation are fairly clear. Many languages have become tonal when the voicing/voicelessness conditioning factor ceased to be the main contrastive one, as in various Tibetan dialects. A two-way split can also occur in a language that already has tones, as in Chinese. Rearrangement of the tone system is then likely. Less common, and less universal in the details of their conditioning, are three-way splits. Voiced, glottalized, and voiceless aspirated syllable-initials have been reported to condition the development of low, mid, and high tones in Maru, a Burmish Tibeto-Burman language (Burling 1967).[3] In languages that have tone systems, one or several of the tones may undergo a split conditioned by syllable-initials without all of the tones splitting; in such a case, the tone system may also be further rearranged, possibly by mergers. This last kind of process, conditioned split of some tones, is particularly frequent in Central Loloish languages. The basic conditioning factors are similar: voiced initials condition lower-pitched tones, and voiceless initials, especially glottalized or unaspirated, condition higher-pitched tones.

The development of contour conditioned by syllable-finals is not as universal as the developments conditioned by initials, but it is frequently encountered. Haudricourt (1954) suggests that the two processes combined to produce the six tones of most dialects of Vietnamese. Matisoff (1970) gives a clear example of the development of a rising

tone in Lahu conditioned by a final glottal-stop.[4] Fewer changes conditioned by finals would in any case be predictable, as there are usually fewer oppositions in final position.

Other processes of tonogenesis are likely to occur only in languages that already have tone systems. These are called rearrangement above. Some such processes are discrete; others may be continuous. The most spectacular discrete process is flip-flop: two or more tones exchange phonetic values; Hashimoto (1972) cites some examples from Chinese. Brown (1965) attempts to explain flip-flop as an articulatory process. Another possibility is hopping: one tone's phonetic value changes to a value opposite to that it previously had relative to another tone, without the other tone undergoing a change.[5] Baron (1975) cites some examples, again from Chinese. One subtype of tone sandhi may also be discrete: in a specific environment, often determined by the tones of adjacent syllables, a particular tone has a phonetic value unlike its own realization elsewhere, but identical or similar to the realization of another tone.[6]

Continuous tonal rearrangement processes are less unlike developments in segmental phonology. There is assimilation; there are chain shifts within a continuously variable range of pitch; and there are changes in the direction of ease of articulation. Assimilation changes are also called tone sandhi in Asia, but the word 'spreading' could instead be borrowed from African linguistic usage: a tone becomes more similar to an adjacent tone. Ballard (1973, 1975) gives examples of both progressive and regressive spreading, again from Chinese. Chain shifts usually occur *after* another process, often discrete or universal, has caused instability in the tone system. Part of the instability may be resolved by mergers of tones with similar realizations, but Loloish data provide several instances, different in detail, of apparent push-type chain shifts. For example, in Northern Loloish, the hopping of the Proto-Loloish low tones to high pushes the Proto-Loloish high tone to mid, and mid tone to low.[7]

Ease of articulation considerations can be seen in the spreading subtype of tone sandhi, and in chain shifts which increase phonetic distinctness between tones when other processes have made them more similar. Another kind of change which reduces muscular effort is the elimination of phonation differences, such as laryngealization or other forms of constriction – which often result from the presence of final consonants, and then become contrastive when the final is lost. Thus, in a sense, there is a cyclical process – the final disappears, leaving phonation differences; then the phonation disappears, possibly leaving pitch and contour differences and hence a new tone. Of course,

when the final or phonation difference is lost, the result could also be a merger with an otherwise similar unconstricted tone.[8]

Another kind of least-effort change, not previously suggested but widespread in languages that are already tonal, is the development of a mid-pitch tone from high- or low-pitch tones. Various measurements of muscle activity[9] show that more effort is involved in the production of high or low pitches than mid pitches. We may thus account for the widespread tendency to develop mid tones, despite the possible resulting increase in the number of contrastive pitch-levels. This hypothesis may account for changes in Proto-Loloish and elsewhere.

Tone systems operate as systems, with each member opposed to all other members. Of course, the above kinds of change may result in extensive rearrangement of oppositions, adding more and more contrasts — up to five pitch levels; contour, possibly including rising, falling, concave (falling-rising) and convex (rising-falling); and other suprasegmental factors, such as length, constriction or phonation generally. Segmental factors, such as final glottal-stop or other stops with short tones, may also be considered part of the realization of certain tones. However, few if any languages have more than eight tones. When tone change processes result in excessive numbers of tone oppositions, mergers can be expected. In fact, in languages with many tones, we can usually account for some tones in terms of the processes outlined above. Given data from enough languages, and using the usual principles of historical linguistics[10] we can make and verify hypotheses about the phonetic values of reconstructed tone categories; provide further evidence for subgrouping based on shared tone changes; and show more instances of general tonogenetic processes.

2. LOLOISH TONES

Data are given from languages in the three major subgroups of Proto-Loloish.[11] Southern Loloish is represented by Akha (Lewis 1968; two dialects); other Southern Loloish languages such as Bisu, Phunoi and Mpi have identical pitch systems, but have no distinction between constricted and fully-voiced phonation. Northern Loloish is represented by 'Lu-ch'üan Lolo' (Ma 1948, cited in Matisoff 1973). Central Loloish is represented by Lisu (Fraser 1922), Sani (Ma 1951, cited in Matisoff 1973), and Lahu (Bradley 1975a; three dialects). Central Loloish languages have the most complex tonal systems: Lisu has a tone contrast maintained by contour alone and a tone contrast maintained by phonation alone; Sani has five contrasting level tones.[12] Lahu (two dialects) has the most tones, seven; it uses syllable-type contrast, two or three pitch-levels, and rising vs. falling contour in various

combinations. Two Tibeto-Burman languages close to, but not part of, Proto-Loloish are also cited to carry the reconstruction back towards Proto-Tibeto-Burman. Burmese (Bradley 1975a) is a member of the Burmese-Lolo division, the group of which Loloish is a subdivision; Naxi (Bradley 1975b) is the other modern member of the Naxi/Burmese-Lolo subfamily, the group of which Burmese-Lolo is a division.

Akha (A) fully voiced vs. laryngealized phonation

55		
33	33c	
21	21c	

Lu Ch'üan (LC) fully voiced vs. constricted/short, glottal-stop final

55	55c	
33		
11	22s	

Lisu (Ls) fully voiced vs. constricted

55			
44			
33	f	33c	(dialectal)
35			
21		21cs	often glottal-stop final

Sani (S) long	short
55	
44	
33	
11	22s

Lahu (Black) long short, glottal-stop final

(L-B)	54		
	35	35s	
	33		
	21	21s	
	11(2)		rise is optional
(Yellow)	long	short, *optional* glottal-stop final	
	55		
	54	35s	
	33		
	11	11s	merger in rapid speech
	13		
(Shehleh)	long	short, glottal-stop final	
(L-S)	44		
	45	45s	
	22		
	21	21s	

Burmese (B)	long	laryngealized	short, glottal-stop final
	43	44c	55s
	11		
Naxi (Nx)	(no phonation contrast)		
	55		
	33		
	21		

3. PROTO-LOLOISH TONES

Burling (1967) very insightfully reconstructed the tones of Proto-Burmese-Lolo, using Akha, Lisu, and Lahu data for Proto-Loloish, and Burmese among other data for Proto-Burmish. While various scholars, especially Matisoff, have made considerable advances on Burling in the reconstruction of segmental phonology, only one major change is necessary in Burling's reconstructed tone categories. Burling reconstructed three tones, Proto-Tone 1 (*1), Proto-Tone 2 (*2), and Proto-Tone 3 (*3) in vowel- or nasal-final syllables; and two tones, herein Proto-High Stopped Tone (*HS) and Proto-Low Stopped Tone (*LS), in stop-final syllables. The correspondences are as follows: (changes shown by lines)

*L	A	LC	Ls	S	L-B	L-S	L-Y	environment
*1	55	33	33	44	33	44	33	*?- prefix voiceless
	55	33	33	44	21	21	54	*?- prefix voiced
	55	33	44	33	33	44	33	(non-?-prefix)*voiceless
	55	11	44	33	21	21	54	(non-?-prefix)*voiced
*2	21	33~11	55	55	11(2)	22	11	*?- prefix
	21	55	21	11	11(2)~54	22~21	11~55	*C- prefix voiceless
	21	55	21	11	54	21	55	*voiceless (unprefixed)
	21	33	21	11	11(2)~54	22~21	11~55	*C- prefix voiced
	21	33	21	11	54	21	55	elsewhere
*3	33	11	33(c)	44	33	44	33	*voiceless
	33	11	33(c)	33	33	44	33	*voiced
*HS	33c	22s	35	44	35s	45s	35(s)	*voiceless (unprefixed)
(*S^2)	33c	22s	33(c)	44	35s	45s	35(s)	*prefixed or *voiced
*LS	21c	55c	55	55	35	45	13	*?- prefixed
(*S^1)	21c	55c	21cs	22s	21s	21s	11(s)	elsewhere

The *HS and *LS tones of Proto-Loloish do not correspond to any tonal distinction outside Loloish, not even in closely-related Proto-Burmish. Matisoff (1972) elegantly demonstrates that this Proto-Loloish tonal distinction was conditioned by *voicelessness/*voicing of initials — *HS/*LS. When the conditioning environment was disrupted by changed in *initials, a pitch distinction became tonal.

The preponderating reflex of *HS is a mid-level tone, apart from Lahu which has added contour — possibly conditioned by a final glottal-stop. The preponderating reflex of *LS is a low-falling tone. In Central Loloish, a *?-prefix and a final glottal-stop together produce a high (rising) tone, and the final glottal-stop is lost. In Northern Loloish, *LS has hopped past *HS to high level, producing rearrangements in other parts of the tone system — including a downwards push for the reflex of *HS in this language.[13] Having thus accounted for differences from the preponderating reflexes, mid-level pitch can be postulated for *HS, and low-(falling) pitch — contour not contrastive — for *LS. At the Proto-Loloish stage, this contrast was a two-way split conditioned by *initial-consonant larynx activity; at an earlier stage, Proto-Burmese-Lolo, no tone contrast is reconstructed in *-stop syllables.

Different Loloish languages have reached different stages in the reduction of the *-stops. Some Southern Loloish languages retain /-p/ and /-t/;[14] some Central and Northern Loloish languages have glottal-stop finals reflecting *-stops in some reflexes of *HS, *LS, or both. Loloish languages in all divisions have constriction or laryngealization of the vowel as a reflex of *-stops in some or all reflexes of *HS, *LS, or both. And in some cases, all trace of the *-stop is lost — in Central Loloish, which is precisely the division which has developed contrastive use of contour.

The presence of final glottal-stop or constriction in reflexes of syllables with tones *1, *2 or *3 — and no *-stop — is rare, and limited to reflexes of *3 in some dialects of Lisu and Nasu. There is greater effort involved in producing final glottal-stop or constriction; also, the addition of such features appears to be contrary to the general tendency observed above to eliminate them. So why do they appear in reflexes of *3? The answer appears to be that, at the Proto-Burmese Lolo stage, *3 split form *2, conditioned partly by *s- prefixes and various suffixes including *-d and a morphological *-?;[15] and that these segmental items left a phonation difference which persisted to the Proto-Loloish stage. This tone is by far the least frequent in the etyma reconstructed for Proto-Loloish. Most reflexes are mid-level unconstricted; but in Northern Loloish, *3 has chain-shifted down to

11; Sani is the only language to split *3: a higher tone results with a *voiceless initial, but a mid-level tone is the reflex with a *voiced initial. Thus, we can postulate mid-level pitch for *3 at the Proto-Loloish stage, with a possibly noncontrastive constriction that differed from the *-stop in *HS syllables.

When developments of the tone systems of Lu Ch'üan, Lisu/Sani, and Lahu are considered individually, the basis for the hypothesis of pitch-values for *1 and *2 will become clearer. I propose that the pitch-values of reflexes in Southern Loloish be considered conservative — as in fact they have been shown to be for *HS, *LS, and *3. That is, *1 was high level, and *2 was low (falling). In other words, Akha may have kept the Proto-Loloish tonal system intact in terms of pitch — along with most other Southern Loloish languages. Thus the system was

Proto Loloish	vowel/nasal final	stop final
*1	55	
*3/*HS	33(c)	33s
*2/*LS	21	21s

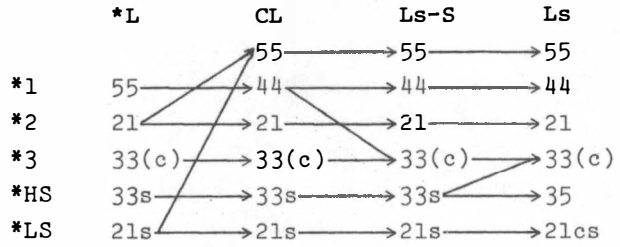
Some Southern Loloish languages show interesting tone phenomena. The Akeu dialect of Akha (Bradley 1976) shows a flip-flop of high-level and low-falling fully-voiced tones, leaving the mid fully-voiced and the two constricted tones unaffected. Mpi (Duanghom 1976) has rising allophones of its three tones, low, mid, and high, which occur with non-negated verb-phrase final verbs. The rise appears to be conditioned by some verb particle which has subsequently been lost; possibly the particle had an initial glottal-stop, leading to the rising allotones.

The main change in the tonal systems of the Northern Loloish languages is the hopping from low to high pitch of *LS, and in parallel fashion of *2. A push chain then moves *HS down in some languages, and *1 and *3 in all languages. The exact details of the conditioning of the push chain differ in different languages. In the Nasu language recorded in Hǔ/Dài (1964), the raised tone *2 merges with tone *1 as mid-level tone, 33; while tone *3 is pushed down to low-falling tone, 21. The resulting tonal system has two constricted tones, 55c and 33c; and two fully-voiced tones, 33 and 21; similar languages, such as the one recorded by Fu (1950), then make ease-of-articulation changes that eliminate constriction when the syllable-initial is a resonant; then, a three-way distinction reappears in fully-voiced syllables. In the Lu-Ch'üan language recorded in Ma (1948) and analyzed in Matisoff (1973), the hopping results in the pushing of the reflex of *HS down to 22s. In this language, the merger of the raised *2 and the high *1 is only

partial; the details suggest a stage at which the raised *2 was higher than the original high *1, as *2 but not *1 has a high-level reflex, 55, after voiceless initials; also, the development of *1 but not *2 to low-level, 11 after voiced
*1 was lower than the raised *2. Otherwise, *1 and *2 are merged to mid-level, 33. There is also a sandhi phenomenon, which lowers the first of two mid-level tones – to low-falling in Nasu (Hǔ/Dài 1964), and to low-level in Lu Ch'üan.

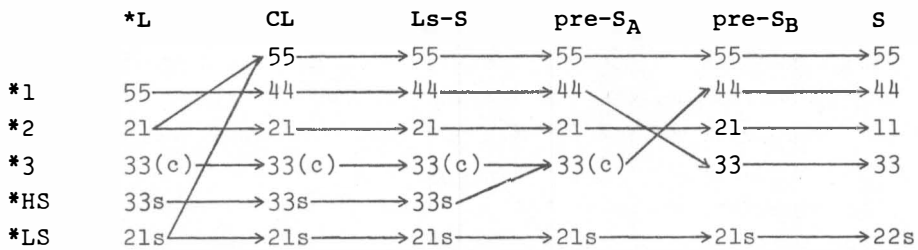
The Central Loloish languages share one major instance of conditioned hopping: *LS and *2 became high when the *initial had a *?- prefix. This partial change is similar to the unconditioned development of the same tones in Northern Loloish. Lisu and Sani share a split of *1 which can be seen as a chain shift downwards in reaction to the raised *2, but although the conditioning is the same, a *?-prefix, the results are opposite in pitch. With *?-prefix, Sani has a half-high level reflex for *1, while Lisu has a mid-level reflex. Without *?-prefix, Sani has a mid-level reflex for *1, and Lisu has a half-high level reflex.

Lisu has one further split that does not occur elsewhere: *HS becomes high-rising with unprefixed *voiceless (aspirated) initials, and the final glottal-stop is lost; with other *initials, prefixed or voiced, *HS remains mid-level as in Proto-Loloish, but loses its final glottal-stop and in most dialects its constriction. The former development may have been caused by initial aspiration and final glottal-stop. The latter development results in a merger of some *HS with *3 and the *?-prefixed *1 syllables also lowered to mid-level. Also, a *contour* contrast becomes contrastive, to keep the new high-rising tone distinct from the high-level, half-high-level, and other tones. The *LS tone reflex also acquires constriction. Schematically,



The Sani developments, as in some Northern Loloish languages, tend to produce exclusively level tones, with five pitches and possibly also phonation, but no contour. As noted above, the split of *1 is the same, but opposite pitches result from the conditioning factors. There is no *HS split, but there is a split of *3, merging with the reflexes of *1:

a higher, half-high-level pitch results with voiceless initials, and a mid-level pitch results with voiced initials. In addition, the non-contrastive contour of *2 (not *?-prefixed) is eliminated in favour of low-level; the noncontrastive contour of *LS (not *?-prefixed) is eliminated in favour of a half-low level; thus, the final glottal-stop seems to condition a higher pitch. The *HS has a half-high-level pitch, and has thus also been raised in pitch; as in Lisu, it merges with the *?-prefixed *1 and some (but unlike Lisu, not all) *3. Perhaps there has been a flip-flop between half-high and mid-level in Sani, preceding the unique split of *3, but following the Lisu-Sani split of *1 and the merger of *HS with the lower-pitch reflex of *1. Schematically,



The developments in Lahu are far the most complex, and the resulting tone systems also have the most contrasts, including contour; length and final; and three (or two) contrasting pitch levels. Also, developments in different dialects produce very different pitch and contour realizations for underlyingly similar tone systems. I consider the Black Lahu dialect, the standard and probably the most conservative, first.

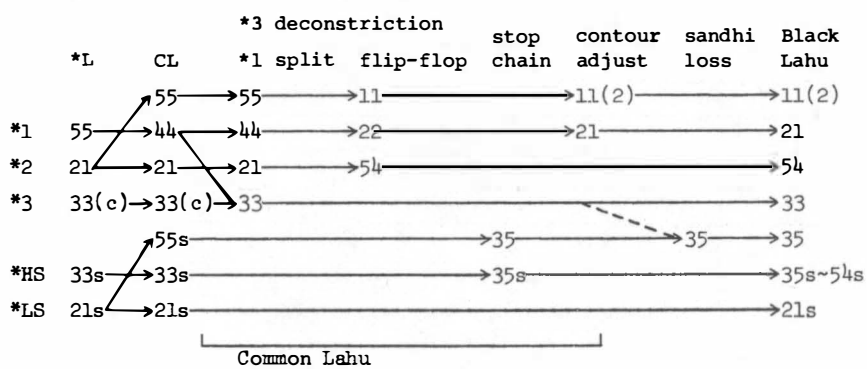
The Central Loloish hopping of *2 and *LS, contrary to the above diagrams for Lisu and Sani, must have maintained a distinction between the high reflexes of *2 and those of *LS; the distinction was then merged in Lisu-Sani. In Lahu, however, the distinction is maintained to the present. The modern distinction in Lahu is rising contour in reflexes of *LS, and level in reflexes of *2 in most dialects; thus the Central Loloish distinction lost in Sani-Lisu was probably a glottal-stop in *LS reflexes, which conditioned the Lahu rising tone and was then lost; and was lost without trace in Sani-Lisu.

The Reflex of *3 has lost its constriction, as in most Central Loloish languages. There is a split of *1 as elsewhere, in a chain-shift reaction to the raising of some *2. However, the split is conditioned by *voicelessness (higher-pitched tone results) vs. *voicing (lower-pitched tone, which merges with *3, results) and not *?-prefix. Thus,

as in the case of the *LS/*2 hopping, a similar change with different conditioning occurs in separate, but close subgroups of Proto-Loloish; in this case, Lisu-Sani vs. Lahu.

There was then a flip-flop of all pitch values in fully-voiced syllables — not including the raised *LS, which must thus have kept its final *-stops at this stage. As frequently occurs, the flip-flop leaves the mid-level tone unaffected, but reverses all other values. In this case, the raised *2, 55, is reversed to 11; the *voiceless-initial *1, 44, is reversed to 22; and the non-raised *2, 21, is reversed to 54.

After this flip-flop, various rearrangements are introduced which produce a rising vs. falling contour contrast. The reflexes of stop-final syllable tones are adjusted in a chain shift: the raised (*?-prefixed) *LS becomes high rising and then loses the final glottal-stop that conditioned the rise; then the *HS develops a rise — and in some dialects, later a fall.[16] Also, the low-level and half-low-level tones develop contour, possibly by analogy with the high-falling vs. high-rising contrast that occurs after the stop-syllable chain shift. In Black Lahu, the low level tone develops an optional rise that does not occur in all dialects and may thus be a separate development; and the half-low-level tone develops a fall. A sandhi process which produces rising allotones of the mid tone ceases to be productive, and some instances of the sandhi allotone are reinterpreted as the new high-rising tone. Schematically,

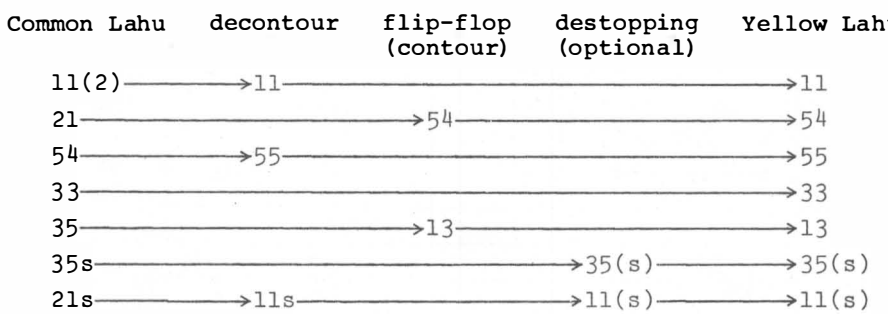


The developments suggested seem to have occurred in the order cited. Alternative ways of accounting for the development of Lahu tones are possible, but this schema seems to fit best with developments in closely-related languages, and with likely processes of tonogenesis.

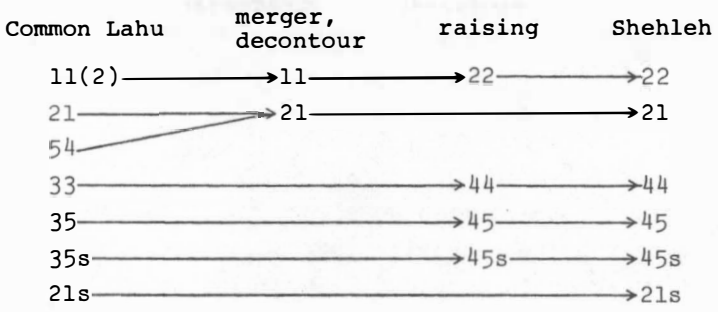
Other dialects of Lahu have undergone further developments; once a system is as complex and unstable as the Lahu tone system, further

developments are likely. Yellow Lahu (Bradley 1974, 1975a) seems to have begun its separate development some time ago, at the Common Lahu stage. A decontour rule shifts the Common Lahu high-falling tone to high-level; also, the low-level tone does not have a possible contour in Yellow Lahu; and the lowest stop-final tone also loses its contour. Thus, pre-Yellow Lahu avoids a rising vs. falling distinction; but it keeps a contour contrast, with high-level vs. high-rising, and low-level vs. low-falling tones. This can be seen as a rearrangement after the stop chain and contour adjust rules of Common Lahu. Subsequent to this rearrangement, a flip-flop occurs with non-stop final contour tones: low-falling becomes high-falling, and high-rising becomes low-rising. After this flip-flop, a destopping change in certain juncture environments permits the two Common Lahu glottal-stop final tones to occur without the glottal-stops. No contrast is lost with the loss of the final in the high-rising tone as a result of the previous flip-flop, but there is partial neutralization of the low level stopped and unstopped tones.

The resulting tonal system for Yellow Lahu contrasts three pitch-levels, and has a contour contrast in unstopped tones; the two contour tones move from the extremes towards mid pitch. Tones which may be stopped are high, with rising contour, and low, usually without contour. Schematically,

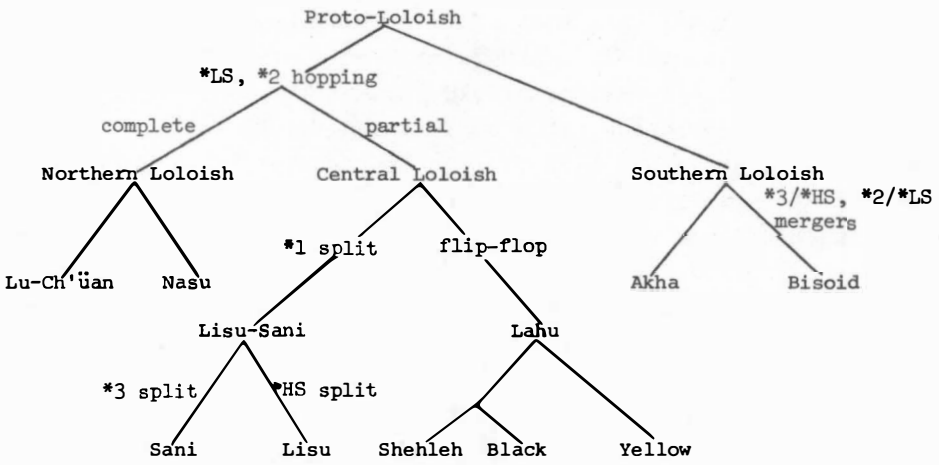


Shehleh, which is somewhat more closely related to Black Lahu, also shows considerable rearrangement of its tone system. Like Yellow Lahu, it eliminates the rising vs. falling contrast, but by merging the high-falling tone to low, and decontouring the low (rising) tone to level. The result is a contour contrast, with a low-falling and a high-rising tone. Then, a chain-shift adjusts the pitches of the various tones upwards so that only two pitches are contrasted.
Schematically,



The resulting system has contour which moves away from the contrasting pitch, and is redundant in stop-final syllables.

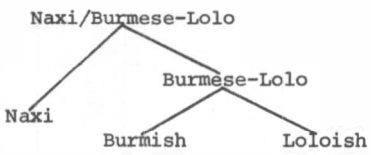
Using the above tonal developments to subgroup within Proto-Loloish, we find a tree diagram as follows.



4. PROTO-LOLOISH AND PROTO-SINO-TIBETAN

Benedict (1972) has reconstructed a two-tone system, Tones *A and *B, for Proto-Sino-Tibetan, with correspondences in Chinese, Karen, and in various subgroups of Proto-Tibeto-Burman including Burmese-Lolo. It seems likely that this system contrasted higher and lower pitches; but the likelihood of flip-flops at any stage makes it very difficult to say which tone had which value at what stage. At the Proto-Loloish stage, *A corresponds to *1, and hence a high-pitch value, while *B corresponds to *2, or a low (falling) value. Attempts to compare the Proto-Loloish tone system with those of Burmese and Naxi follow. First, a correspondence table:

*BL	*L	B	Nx
*1	55	11	21
*2	21	43	33
*3	33c	44c	does not occur



As noted above, Proto-Burmish developments of *-stop syllables do not correspond to the Proto-Loloish *HS/*LS split. The Naxi spit is also separate, as shown in Bradley 1975b. Also as noted above, *3 is a unique Burmese-Lolo development; the non-occurrence of a separate tone corresponding to *3 is a major criterion for separating Naxi from Proto-Burmese Lolo. The above tree diagram thus indicates the genetic relations between the three as suggested by tone correspondences.

When Burmese is compared to Proto-Loloish, various differences can be seen. The Burmese reflex of Proto-Burmish *1 is low level, and of *2, falling and higher than that of *1. Thus, we must postulate a flip-flop in the values of *1 and *2 either in Proto-Burmish or in Proto-Loloish. A look further afield, at Naxi, reveals agreement with Burmese about the relative pitches of *1 and *2: *2 was higher than *1. Hence, we may postulate a flip-flop in Proto-Loloish, as well as the split in *-stop syllables discussed earlier.

Checking pitch and contour of tonal reflexes in Burmish languages other than Burmese suggests that the three tones which contrasted in *vowel- or *nasal-final syllables in Proto-Burmish were: *1 low, more or less level; *2 falling, usually thus higher than *1 in pitch; and *3, high, often constricted or with glottal-stop final.[17] Much more work is necessary to allow secure internal reconstruction of the history of Proto-Burmish.

The development of *3 in Proto-Burmese-Lolo from *2 when certain *prefixes or *suffixes were present accounts for the fact that reflexes of *3 often show laryngealization, constriction, or even final glottal-stop. Presumably, *3 was similar to *2 in pitch and contour when it first developed, and the distinction was one of phonation. In Proto-Loloish, ease of articulation considerations moved *3 to mid pitch, and subsequently the phonation difference was lost in most languages – producing three distinctive pitch levels for tone. In Proto-Burmish, the phonation difference is often kept, as in Burmese; but languages which have lost the phonation difference have often kept the reflex of *3 as a high pitch, usually level; while they have a reflex of *2 which is lower in pitch than that of *3, and which usually falls. This tendency can be seen to a small extent even in Burmese, but languages like Atsi and Maru (Burling 1967) seem to show the development of contrastive falling contour and lower pitch for reflexes of *2 –

another instance of a possible chain shift, with a phonation loss initiating the downward movement of pitch of a tone that had the unmarked, fully-voiced phonation.

In Naxi, there are several tonal splits separate from those of Burmese-Lolo. Syllables with *-stops show a three-way split, low (falling), mid, or high tones resulting depending on the initial. Syllables with Proto-Naxi/Burmese-Lolo tone *2, Proto-Sino-Tibetan tone *B also sometimes have reflexes with high tones instead of mid tones; this split is morphologically conditioned. However, both splits are separate from the similar splits in Proto-Burmese-Lolo, with different conditioning environments.[18] The resulting system contrasts three pitches, with no contour or phonation contrasts.

5. IMPLICATIONS

Now that it is possible to reconstruct possible pitch values for reconstructed tones, further insights can be gained into the process of tonogenesis. For example, the tendency towards mid pitch and the relative stability of mid tones in flip-flops had not previously been suggested for pitch-tone languages. Also, many more examples of processes like flip-flop and hopping can be discovered. Moreover, insights for the reconstruction of segmental phonology may also arise. It is no longer necessary to resort to proto-tone-stuffing, as in Brown (1965), once tone, phonation, and segmental systems are seen to interact in relatively systematic ways. And genetic subgrouping is also aided.

Attempts to rewrite the relatively simple development processes above with binary features (Wang 1967, Woo 1969 or others) will demonstrate the extreme complexity which arises when trying to use such features, the sacrifice of clarity and insight which can result, and especially the massive redundancy required: 2^7 (128) possible tones could be represented with Wang's seven features, if they were really binary, privative oppositions.[19] It would appear that language-specific n-ary features expressing the actual oppositions used would be much clearer, more economical, and would reflect the phonology of tone better.

The kinds of changes that seem to be frequent in suprasegmental phonology are much rarer in segmental phonology. Discrete changes, regressive assimilation to syllable-initial features, and push-chain shifts seem to be common in suprasegmental developments. Gradual changes, progressive assimilation, and drag-chain shifts are much more usual in segmental developments. Tones, perhaps even more than segments, seem to operate within closed systems which react in various ways when a change occurs in one tone.

N O T E S

1. Hyman (ed.) 1973, Maddieson (ed.) 1974, and various other works.

2. Hombert, Ewan and Ohala 1975.

3. Burling 1967 p.65, in *-stop syllables only. Gandour 1974 suggests a similar but more detailed hierarchy in Dai languages. The highest pitches result from aspirated initials, next highest from voiceless fricatives, then voiceless unaspirated, next glottalized, and lowest pitches in voiced-initial syllables. Loloish data, on the other hand, imply that unaspirated or glottalized initials can result in higher pitches than aspirated initials; thus the data are somewhat contradictory.

4. In Lahu, this development is conditioned by two glottal incidents in the syllable: initial and final. After the rising contour developed in Central Loloish, the second glottal incident, the final glottal-stop, was lost.

5. That is, low > high while mid remains mid. The Northern Loloish development of *LS, below, is an instance of hopping.

6. This kind of tone sandhi is analogous to neutralization in segmental phonology. Such a process may also be nondiscrete, if the environment could condition the resulting allotone:

33 > 35 |___5 nondiscrete, assimilatory; Lahu (one dialect)
33 > 11 |___33 may be nondiscrete; Northern Loloish (one dialect)

Wang 1967 cites a spectacular example of a discrete sandhi process which shifts a number of tones in a circle, each taking the value of another. There are various possible consequences of tone sandhi. A process may cease to be productive; it will then be restricted to

certain forms. These may be eliminated through recompounding; but a residue may be left. Such lexical items would then be likely to be reinterpreted with the tone most similar. Internal reconstruction may then be necessary to identify these forms; see Bradley 1975a pp.86-9 for an instance in Lahu (one dialect).

7. Push chains are of course rare in segmental phonology; but then, so are flip-flops. This instance could also be analyzed as a shift of phonetic values in a circular fashion.

8. As in Bisoid Loloish languages, below. Incidentally, there are various counterexamples in Proto-Burmese-Lolo and Proto-Loloish to Wang's (1967) claim that laryngealized tones tend to be low-pitched. See, for example, Proto-Burmese-Lolo tone *3 below.

9. The following are cited in Sawashima 1974:
Faaborg-Andersen and Sonninen, 'The function of the extrinsic larynx muscles at different pitch' *Acta Oto-Lary* 51:89-93 1960.
Hirano, Koike and von Leden, 'The sternohyoid muscle during phonation' *Acta Oto-Lary* 64:500-7 1967.
Zenker and Zenker, 'Uber die Regierung der Stimmlippenspannung durch von aussen eingreifende Mechanismen' *Folia Phoniatrica* 12:1-36 1960.

10. E.g. statistical preponderance of reflexes; low probability of parallel independent changes; and phonetic reasonableness of postulated changes.

11. Subgrouping crit
changes, and shared vocabulary.

12. Thurgood 1975 points out that at least one of these is also distinguished by phonation from the others: 22s.

13. This downward shift of *HS does not occur in all Northern Loloish languages; for example, in standard Nasu as cited in Hú and Dài 1964, analyzed in Bradley 1975a, the reflex of *HS is 33c, and of *LS 55c.

14. It is certainly no accident that the languages which have preserved the *-stops best, the Bisoid languages Phunoi and Bisu, are also the ones which have merged the tones of *-stop syllables with other tones: *HS with 3, and *LS with *2. Since most of the segmental

distinctions are preserved, not much ambiguity is caused by a tonal merger. The result is a three-tone system.

15. Bradley 1971.

16. Matisoff describes such a dialect.

17. Bradley 1975a p.318.

18. For more details, see Bradley 1975b.

19. Some, of course, are not; Wang also uses marking conventions to further reduce the redundancy; but why use excessively powerful mechanisms and then constrain them? Binary features with α-rules can be used very effectively to represent discrete changes of some kinds; but so can n-ary features. The fact that the mechanics of using binary features are well-developed is no reason to reject alternatives which have been less fully-explored.

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AKHA AND SOUTHERN LOLOISH

DAVID BRADLEY

Akha is a Southern Loloish Burmese-Lolo Tibeto-Burman language spoken by more than 1000,000 people in southwestern Yunnan, China; eastern Shan State, Burma; northern Thailand and Laos; and northwestern Vietnam. Various names are used by other groups to refer to the Akha: in Burmese, ၆ကော် or Kaw; in Thai, อีก้อ or Ikaw; in Lao and Shan, ခ့ၢ်ဝ် or Kha Kho; in Chinese 哈尼 or Hānǐ; and in Vietnamese, Hanhi. Because of this diversity of names, some of which also refer to other groups, the total extent of Akha population has not usually been realized.[1]

The term 'Hani' as used in China and Vietnam refers to various ethnic groups who speak Loloish languages; the majority of these are probably speakers of Akha dialects. At any rate, the 'standard' Lǜchūn dialect of Hānǐ, recorded in Hú/Dài 1964, is an Akha dialect;[2] and several other dialects, including Jiāyín and Yǎnǐ, also may be. On the other hand, various other languages included within 'Hani' are Wonoid.[3] Some Hanhi in Vietnam are also Akha; but others are speakers of Wonoid languages.[4]

The Akha have a distinctive culture, with strong emphasis on religion. They are divided into named patriclans; dialect divisions are said to follow these clan divisions. The 'standard' Akha of Burma and Thailand is the dialect of the Jeu˩g'oe˩ clan, and the next most important dialect there is that of the A˥jaw˥ clan.[5] A similar dialect is recorded from northwestern Laos;[6] most of the Akha in Thailand also are Jeu˩g'oe˩, but speak a slightly different dialect. In northeastern Laos and adjacent areas of Vietnam, these clans are unknown; a rather different dialect is spoken. In Laos, the largest clan is the Nu-Quay.[7] It is possible that Lǜchūn Hānǐ, Jiāyín, and Yǎnǐ are similarly the

Bradley, D. "Akha and Southern Loloish". In Bradley, D. editor, *Papers in Southeast Asian Linguistics No. 5.*
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dialects of particular Akha clans, living in China. There are also more divergent dialects, such as the A˅keu˅ of Burma;[8] possibly some languages spoken in China also fall in this category.

SUMMARY OF EXISTING DATA

A. Akoid Vocabularies

1.	Burma/Thailand/NW Laos	Akha	Scott/Hardiman 1900 Madrolle 1908 Ko Antisdel 1911 Kaw Lewis, Nishida, Dellinger, Egerod, Katsura, *et al.*
2.	Vietnam/NE Laos/China	Akha	Lefèvre-Pontalis 1892 Ounhi Roux 1924 Hú/Dài 1964 Yǎní
3.	NW China	Akha	Hú/Dài 1964 Hāní Hú/Dài 1964 Jiǎyín
4.	A˅keu˅ (Burma) (*not* Lefevre-Pontalis 1892 Kouï, which is La˅hu_ shi: ban˛keo:)		Scott/Hardiman 1900 Akö
5.	Lami, Khali (China)		Lefèvre-Pontalis 1892
6.	Asong, Phana (Vietnam, Laos) (formerly called Kha Pai, and now Sila)		Lefèvre-Pontalis 1892 Nguyen 1973 Sila
7.	Pe˅law˅meh˅ or Law˅Pe˅ (China)		(Lewis 1970a v.IV 764 mentions)

B. Bisoid Vocabularies

1.	Pyen (Burma)	Scott/Hardiman 1900
2.	Bisu (Thailand)	Nishida 1966a, 1966b, 1967
3.	Phunoi (Laos, Vietnam)	Lefèvre-Pontalis 1892 Khong Roux 1924 Phunoi Bradley 1973 Phunoi Ferlus 1975 Phou Noy Vuong 1973 Côông

C. Wonoid Languages

Kǎduō: Wonoid group living near Zhènyuán, cited as Ka-to, K'ato, etc. in Lefèvre-Pontalis 1902, Madrolle 1908, and Davies 1909. Vocabulary in Hú/Dài 1964.

Bìyuē: Wonoid group, cited as Woni with two subgroups, Pi-yo and Lo-mi, in Madrolle 1908; and as Pi-o in Davies 1909. Vocabulary in Hú/Daì 1964.

Báihóng: Wonoid group, cited as Ma-hê in Madrolle 1908, and as Ma-hei or Pa-hawng, with a vocabulary, in Davies 1909. Vocabulary in Hú/Daì 1964.

Háoní: another Wonoid group in the same area; vocabulary in Hú/Daì 1964.

Mpi: Wonoid group in Thailand; data from Harris, Ege, and Bradley.

'Hani' vocabularies (of Wonoid languages): Gao 1955,[9] Madrolle 1908.

'Woni' vocabulary (of a Wonoid language): Yuan 1947.[10]

D. Lahoid
E. Lisoid } cf. Bradley 1975a

F. Nasoid (not Southern Loloish)

Hua y, formerly White Lolo China and Vietnam; vocabularies Lefèvre-Pontalis 1892, Madrolle 1908, Liétard 1913,[11] and elsewhere.

Lùquàn, included in Hani by Hú/Daì 1964.
(also many other languages, spoken far to the north)

G. Genetic Group Uncertain

Měiluò
Xīmóluò } 'Hani' dialects cited by Hú/Daì 1964 without vocabulary.

Zaìwǎ: Loloish language cited in Hú/Daì 1964 (*not* Hani).

Putu: cited by Davies 1909 and Madrolle 1908 (who adds Makho) as close to Kǎduō and Bìyuē; no vocabularies, China.

Lopi/Nopi: cited by Madrolle 1908 and Davies 1909; China.

Peupa/Pula/Fula: cited by Madrolle 1908 and Davies 1909; China.

Simo: Madrolle 1908, China.

K'u-tsung: Devéria 1886, Davies 1909; China, *not* Tibetans.

Sansu: Davies 1909, China.

Bo Kho Pa, formerly Xa Pho: Nguyen 1973, Vietnam.

Data on non-Southern Loloish languages from outside the usual range of Southern Loloish is not included. Herein, only the data on Akha will be considered in detail. Reconstructions are from Bradley 1975a.

These reconstructions are formulae based on Proto-Loloish (*L) correspondences.

Forms from Lewis 1966b, Roux 1924, and Hú/Daì 1964 are listed in a wordlist, which forms the corpus of data to be considered. Thus, three main subdialects within Akha are compared. These data are supplemented with data from Lefèvre-Pontalis 1892, comparable to the Roux material; and from Madrolle 1908, most directly similar to the Lewis material.

The Lewis transcription is his orthography for Akha, using some conventions from the Lahu orthography. Roux uses the Vietnamese orthography[12] to represent Akha, with less than total success. Hú and Daì use an IPA-style transcription, with Chao tone-letters. A brief summary of the transcriptions follows; for more detail, consult the original works.

Lewis

Initials

p	py	t	ts	c	k	k'	ø
b	by	d	dz	j	g		
m	my	n		ny	ng		
			s	sh			(h)
		l	z	y	g'		

Vowels

i	(oi)		vi	
(e)	oe		eu	
eh				aw
(m)		a		(ah)

Tones

˅[ㄱ]
[ㅓ] ^[ㅓ]
˅[ㄴ] ^[ㄴ]

c, j, ny, sh and y represent /tʃ/, /dʒ/, /ɲ/, /ʃ/, and /j/ respectively. ng and g' represent /ŋ/ and /ɣ/; k represents /x/, and ø (absence of initial) represents /ʔ/. oi and oe represent /y/ and /ø/; ui and eu represent /ɯ/ and /ɤ/; and eh and aw represent /ɛ/ and /ɔ/. m can be syllabic; ah is a nasalized /ɔ̃/. The tones have the pitch values given in brackets. Akha, a register language, has three unconstricted tones, which occur with aspirated initials; and two constricted tones, which occur with unaspirated initials, and are marked with inverted hačeks. Thus, aspiration is a redundant factor in the realization of unconstricted syllables. Parenthesized items occur only in unconstricted syllables.

Roux

p	pi	t	ts, ki	c, k	ø		i	ʊ	u
p'	p'i	th	tch	k'			e	ʊ	ô
b	bi	d	ch	g, c			e	a	o
m	mi	n	nh	ng					
		s	sh, ch	kh	h		ˊ[˥]		
	l	z	y	g			ø[˧] ø˳ , [˧]		
							ˋ[˩] ˳[˩]		

Roux is not entirely consistent in his transcription; he includes phonetic details unnecessary for other dialects, such as aspiration; but he does not distinguish between, for example, front rounded and back spread vowels — both are represented with Vietnamese 'barbed' letters. There are also many errors in his glosses. Only the existence of better-recorded dialects makes such data useful. It is possible, for example, that this dialect, like some dialects in Thailand, has merged the dental affricates/fricatives and palato-alveolar affricates/fricatives.[13]

It is also possible that the aspiration may have become contrastive, with the loss of constriction in the higher of the two tones that are constricted elsewhere — the transcription of this tone is very inconsistent. Fluctuation between c and k, g and c, and so on is less easy to account for. Some contrasts, such as that between /g/ and /ɣ/, are completely unrepresented — but may be present nevertheless.

Hú/Dàì

p	pj	t	ts	tɕ	k	ø		ɨ	y	ɯ	w	u
ph	phj	th	tsh	tɕh	kh			e			ɤ	o
b	bj	d	dz	dʑ	g							ɔ
m	mj	n		ɳ	ŋ					a		
			s	ɕ	x							
			z	j	ɣ							

˥ (unconstricted only)
˧ (unconstricted or constricted)
˩ (unconstricted or constricted)

Constriction is represented by *underlining the vowel*, the usual convention now used in China. Absence of initial probably represents initial glottal-stop. There are alveopalatal, instead of palato-alveolar, affricates and fricatives. In the more than 240 forms cited by Hú and Dàì, there are no aspirated stops in constricted syllables; hence this distinction again appears not to be phonologically contrastive.

In comparing the three dialects, the Lewis material will be cited both orthographically and in IPA terms; Roux data is used when patterns are clear. The initial systems of Jeu˅g'oe˅ (Lewis) and Lǔchūn (Hú/Dài) Akha appear to be identical in pattern apart from the absence of /h/ in Lǔchūn, and the above-noted nonphonological representation of aspiration in Lǔchūn.

/h/ occurs in Jeu˅g'oe˅ only in unconstricted syllables; it would appear that Lǔchūn has simply merged *h > /x/.

Lǔchūn has merged *s and *ʃ to /s/, *unlike* Jeu˅g'oe˅. It has then developed a new /ɕ/ from various prefixed *R-type resonants — most of which instead develop to ɣ/j/ in Jeu˅g'oe˅. The *s/*ʃ merger must have followed the development, noted below, of *i/ik to /ɿ/ in Lǔchūn after *dental affricate/fricative initials.

In general, half-close vowels in Lǔchūn have merged with close vowels: *e > /i/, *ø > /y/, and *o > /u/; *but* *ɤ remains /ɤ/ in most cases.

Subsequently, half-open vowels in Lǔchūn have become half-close vowels: *ɛ > /e/, and *ɔ > /o/.

The development of *L *m-final and some *ŋ-final rhymes provides an excellent example in which Nu Quay (Roux) and Yǎní data show a different development than Jeu˅g'oe˅ and Lǔchūn.

	Jeu˅g'oe˅	Nu Quây	Yǎní	Lǔchūn
*-m	m	ung/ong	uŋ	ɔ
*iŋ/oŋ	ɔ̃	ang	aŋ	ɔ

Jeu˅g'oe˅ keeps the two sets of rhymes distinct, conservatively preserving the final *m, and the nasalization associated with *iŋ/oŋ (but not *aŋ). Lǔchūn, with the raised back half-open vowel, merges the two 'nasal-final' rhymes to /ɔ/. In Nu Quây and Yǎní, the *-m rhymes have back rounded vowels as their reflex, while *iŋ/oŋ have a more open vowel; in both cases, there is neutralization of final nasals to /ŋ/. *L *aŋ and *n-final rhymes have non-nasal reflexes in Akha. This development is rather difficult to reconcile with the hypothesis presented by W. S.-Y. Wang and M. Chen on the development of nasal finals in Chinese.

Lǔchūn preserves a distinction between *L *uk and *ok, unlike Jeu˅g'oe˅; but the distinction is the opposite of that seen in Lahu, and reconstructed for *L.

Another instance in which *L forms are required for the interpretation of dialectal correspondences is /ɿ/ in Lǔchūn. This vowel occurs after *dental affricate/fricative initials as the reflex of *L *i or *ik, with the appropriate tonal correspondence. In Jeu˅g'oe˅, such

*rhymes with these *initials have merged with other front-vowel *rhymes such as *e, giving reflexes such as i/i/, ui/ɯ/, and so on. Subsequently, Lǔchūn also develops *e > /i/.

A dialectal difference which separates southern Jeu˅g'oe˅ from other Akha dialects is the reflex of *L *w and *r initials before rhymes with *a, such as *a, *ak, and *ay. Southern Jeu˅g'oe˅ has z/z/ as the reflex, while nothern Jeu˅g'oe˅, Nu Quây,[14] and Lǔchūn have /ɣ/.

There are some apparent differences in the development of *resonants in Nu Quay. *hy initials have a reflex transcribed hi by Roux; this reflex is conservative when compared to the Jeu˅g'oe˅ y/j/. Also, *?l initial has a reflex transcribed chl by Roux — unlike the /l/ which is the reflex elsewhere.

Before /i/ (including secondary /i/ from *e) Lǔchūn has initial /ɲ/ for /n/. With some vowels, the palatalized bilabial /bj/ is instead merged to /b/ in Lǔchūn. Sporadic irregularities in correspondence between Jeu˅g'oe˅ and Lǔchūn are indicated in the wordlist below: I for initial, V for vowel, and T for tonal irregularity. For example *wing* (83) daw˅ mi˅ /dɔ˩ mi˩/ Jeu˅g'oe˅, /dɔ˩ mi˩/ not the expected /do˩ mi˩/ in Lǔchūn. The Lǔchūn vowel development from *L *daŋ²ʔmri² is irregular.

The regular differences between Lǔchūn and Jeu˅g'oe˅ are summarized below.

	Lǔchūn	Jeu˅g'oe˅
0.	*ok > u, *uk > o	*ok, *uk > o
1.	*i/ik > /ɿ/ | *TS -	
2.	e, ø, o > i, y, u	
3.	ɛ, ɔ > e, o	
4.	m, ɔ̃ > ɔ	
5.	ʃ > s, h > x	
6.	*hr > ɕ	

AKHA AND PROTO-LOLOISH

Tonal developments in Akha, as in all Southern Loloish languages, are not very spectacular. In fact, Bradley 1975a suggests that Akha preserves the *L tonal system intact.[15] The following chart shows the regular correspondences; position of the vowel is shown by V.

*L	Lǔchūn	Jeu˪g'oe˪	Nu Quây	Phonetic Value
*1	˪ ˥	˪˟	˥́	[˥], unconstricted
*2	˪ ˩	˪˪	˪̀	[˩], unconstricted
*3	˪ ˧	˪	˪	[˧], unconstricted
*H	˪̲ ˧	˪˄	(various)	[˧], constricted
*L	˪̲ ˩	˪˳	˪̣	[˩], constricted

There is some shifting from unconstricted to constricted register, and vice versa, which is particularly frequent, but does not always occur, in certain environments. For example, there is a 'k-dissimilation rule':[16] when a lexical item had the *k-prefix, and a final *k, it develops an unconstricted tone. Examples include *leopard* (14), *rat* (31), *chicken* (50), *ant* (73) and *rock* (337). Conversely, constricted tones develop in some instances with *fricative and certain *resonant initials; examples include *he* (440), *sand* (334), *bamboo* (295), and so on. There are also some sporadic instances of both developments in other environments.

The developments of the *L rhymes (vowel and final if any) in Akha differ very substantially between dialects. Such differences are presumably of comparatively recent origin; thus they may indicate that Akoid maintained some distinctions which had been merged in other Loloish languages. Southern Loloish is generally very conservative with consonant-final rhymes; some Bisoid languages have actually retained *-m, *-n, *-p and *-t as such, while Akoid appears to have been conservative in the case of *-m, *-ŋ in some environments, and in the regular reflection of *-stops with the constricted register. The following chart summarizes the developments.

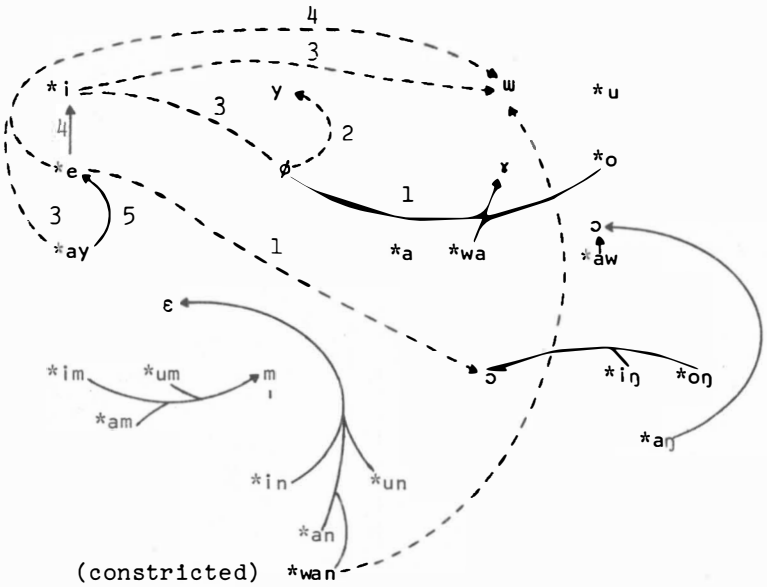
*L	Lǔchūn	Jeu˪g'oe˪	Nu Quây	Comment or Environment
Open Syllables (unconstricted register tones)				
*u	u	u /u/	u	
*o	y	oe /ø/	o˞	(Burmese ui, but *L *o)
*aw	o	aw /ɔ/	o	
*a	a	a /a/	a	
*wa	ɤ	eu /ɤ/	o˞	
*i		oe /ø/	o˞	*Lateral initial
	ɿ	i /i/, ui /ɯ/	i	*Dental Affricate/ Fricative initial
	i	i /ɪ/	i	elsewhere
*e	ɯ	ui /ɯ/	ɯ˞	with *r, initial or medial
	ɔ	ah /ɔ̃/	a	*n initial
	i	i /i/	i	elsewhere

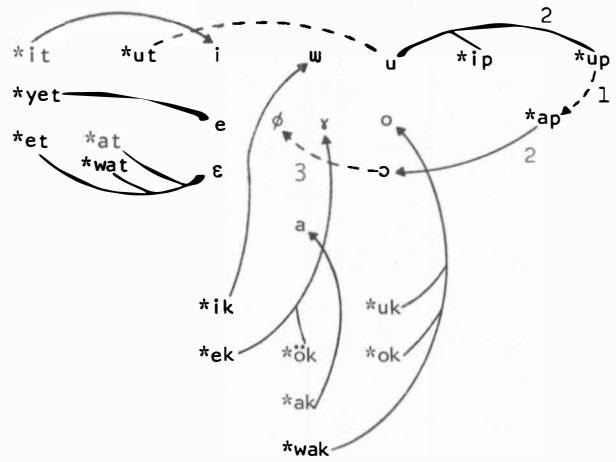
*L	Lǜchūn	Jeu˘g'oe˘	Nu Quây	Comment or Environment
(Open Syllables Continued)				
*ay	e	e /e/	e	*Dental Affricate initial *Velar + *-y- initial
	ɯ	ui /ɯ/	u	with *r, initial or medial
	i	i /i/	i	elsewhere
Nasal-Final (unrestricted register tones)				
*im	ɔ	m /m/	ung	(the differences in
*um	ɔ	m /m/	ung/ong/ông	Nu Quây are based on
*am	ɔ	m /m/	ông	limited data: a total
*wam	ɔ	m /m/	ong	of ten forms)
*in	e	eh /ɛ/	i	
*un		eh /ɛ/	e	
*an	e	eh /ɛ/	e	
*wan		ui /ɯ/	ư	*m initial
		eh /ɛ/	e	*fricative initials
*iŋ	ɔ	ah /ɔ̃/	ang	
*oŋ	ɔ	ah /ɔ̃/	ang	
*aŋ	o	aw /ɔ/	o	
(*waŋ merges with *aŋ or *oŋ)				
Stop-final (constricted register tones)				
*ip	u	u /u/	u	
*up	u	u /u/	u	(sometimes merges with *ap instead)
*ap	o	aw /ɔ/ oe /ø/	ô/o	rare, but cf. *fold* (695) with both
*it	i	i /i/	i	
*yet		e /e/	ê	rare, but cf. *bamboo shoot* (296)
*et	e	eh /ɛ/	ê	
*ut	u	u /u/		*Palatal initial
		eu /ɤ/	ơ	elsewhere
*at/wat	e	eh /ɛ/	ê	
*ik	ɿ	ui /ɯ/	ư	
*ek		eu /ɤ/	o	
*ök	ɤ	eu /ɤ/	ơ	(this rhyme may simply represent variation between *ek and *ok in *L)
	ɯ	ui /ɯ/		
*uk	o	o /o/	ô	Note that Lǜchūn distinguishes *uk and *ok, unlike Jeu˘g'oe˘; but the reflexes are the opposite of the Lahu.
*ok	u	o /o/	ô	
*ak	a	a /a/	a	
*wak	u	o /o/	u/ô	

It should be strongly emphasized that the attested Akha forms often show irregularities in rhyme development in the case of particular lexical items, implying that the *rhyme for Akoid was different from that proposed for *L in Bradley 1975a and herein.

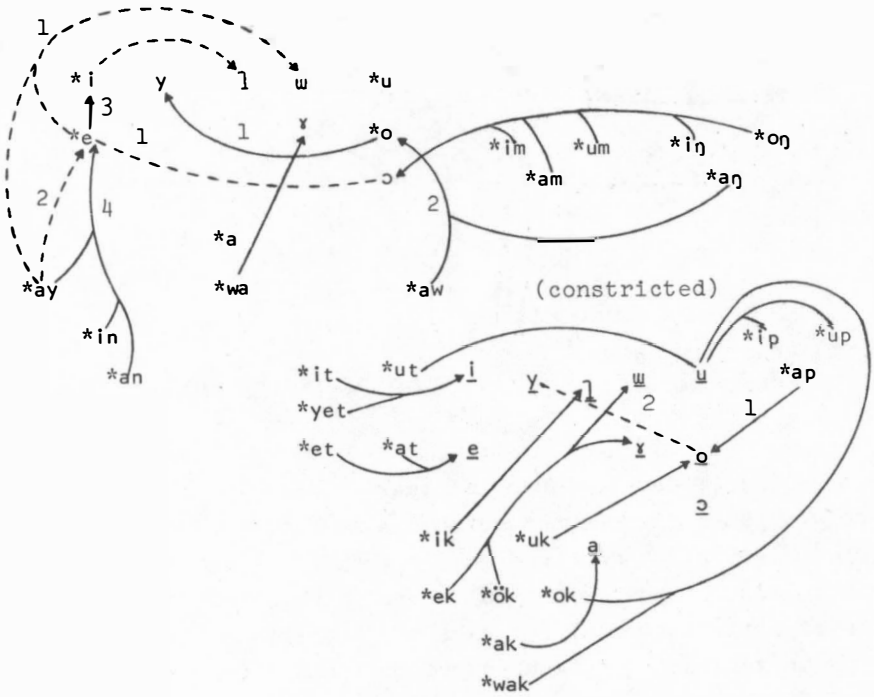
The developments from *L to the various Akha dialects are summarized in the following diagrams. Solid lines represent regular or 'elsewhere' developments, and broken lines represent partial, conditioned developments. Underlining is used to represent constriction. Order is shown by numbers associated with lines. When no lines proceed from a *rhyme, its reflex is similar to the postulated *L reconstruction, e.g. *u > u is not shown.

Jeu.g'oe. (unconstricted)

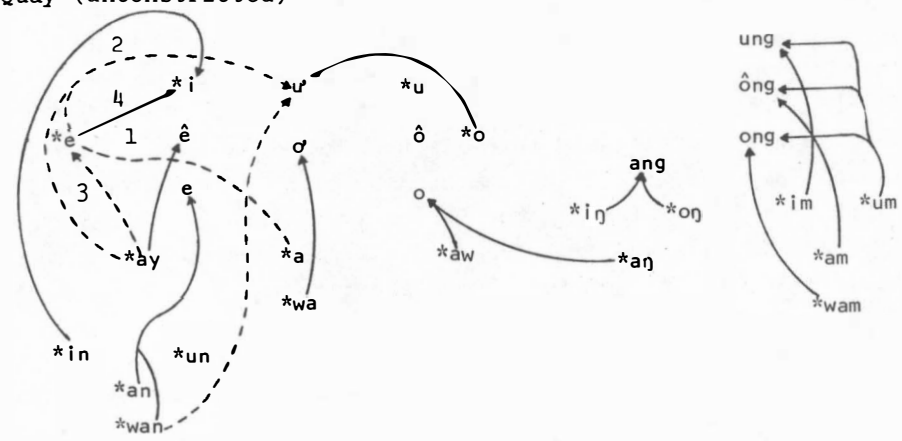


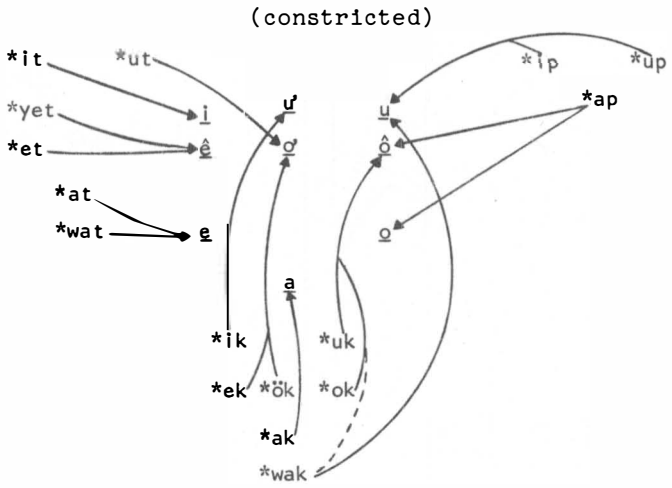


Lǔchūn (unconstricted)



Nu Quây (unconstricted)





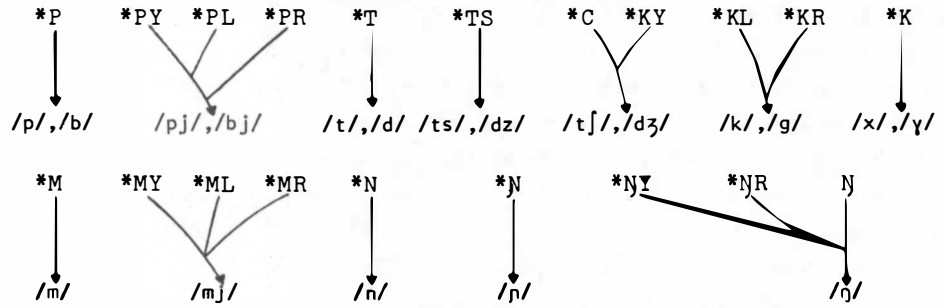
The parallelism of developments is clear.

There are fewer differences between Akha dialects in the developments of *L initials than there are in the developments of *L rhymes. Southern Loloish languages generally are rather conservative in the position of articulation of reflexes of *L initials; but there have been many mergers among *L manners of articulation in the Southern Loloish reflexes.

For *Stops, five *positions of articulation are reconstructed in various sources; using the voiceless unaspirate to represent the class, they are *P, *T, *TS, *C, and *K. In addition, as noted in Matisoff 1973, *P and *K positions have three cluster possibilities with *medials *-y-, *-r-, and *-l-; in total, there are thus eleven *positions: *P, *PY, *PR, *PL, *T, *TS, *C, *KY, *KL, *KR, and *K. The possibilities for *Nasals are slightly more limited: *M, *MY, *MR, *ML, *N, *Ɲ, *ƝR, and *Ɲ. In fact, Bisu (Southern Loloish) data is the only support for *-l- in Loloish.[17] For *Fricatives, three *positions are reconstructed: *S, *ʃ, and *X. *Resonants are reconstructed in four '*positions': *W, *L, *Y and *R. There are also several *Laryngeals: *h, *ʔ (and vocalic anlaut or vowel initial).

Akha has merged *PY, *PL, and *PR positions to palatalized labials: /pj/, /bj/ or /mj/ as appropriate. *KY has merged with *C, as /tʃ/ or /dʒ/; while *NY merges instead with *ƝR and *Ɲ to /ŋ/. *KR and *KL merge to /k/ or /g/; while *K becomes /x/ or /ɣ/ in Akha. Some dialects merge /ts/ and /tʃ/, and /dz/ and /dʒ/.

The following table summarizes the *Stop and *Nasal position developments in Akha.



As was noted above, in Lǔchūn /n/ merges with /ɲ/ before /i/. The developments of the *Fricatives positions parallels that of the *Stops and *Nasals to a certain extent. The relatively scarce *voiced fricatives *z and *ʒ have some *Resonants merged with them. In Jeu˘g'oe˘ *X position fricatives merge into *ʃ position fricatives, giving /ʃ/;[18] in Lǔchūn there is a further merger of voiceless /s/ and /ʃ/.

Syllables reconstructed with *vowel-initials in *L sometimes have /x/ initial in Akha. Akha thus may keep *vowel-initial syllables distinct from *? and *h-initial syllables, which have initial /?/ and /h/ as their reflexes in Akha. The developments of *Resonants are quite complex in Akha, and will be treated separately below.

In Akha, there is a voicing distinction for stops and fricatives; all nasals are voiced. Many *L manner of articulation distinctions associated with *BL and *TB prefixation have been entirely merged in Akha. Thus, Akha is not of much help in the reconstruction of *L manner distinctions; the development of the unconstricted/constricted register system has resulted in a merger of voiceless unaspirated and aspirated stops, probably distinct at an earlier stage but not in Akoid.

Essentially, *L voiceless stops have voiceless reflexes in Akha when *plain (unprefixed) *?-prefixed, and usually when *C-prefixed. *L voiced stops have voiceless reflexes when *C-prefixed. Other *L stops, that is *N-prefixed (voiceless or voiced), some *C-prefixed voiceless, *?-prefixed and *plain (unprefixed) voiced stops, have voiced reflexes in Akha. *L nasals all have voiced reflexes in Akha, whatever the prefix. In this respect, Akha is strikingly unlike the rather closely related Bisoid group — which may imply that the merger of *nasal manners in Akoid is a recent phenomenon. *Voiceless fricatives remain voiceless irrespective of prefixation; *Voiced fricatives, and many *Resonants, have voiced fricative reflexes in Akha.

The development of *L Resonants in Akha is very complex, sometimes involving fusion of prefixes, reprefixation, and other phenomena which make simple statement of reflexes incomplete. There are dialect differences in the reflexes of some *Resonants. Some such differences are

related to differences in the distribution of certain initials before vowels between dialects. That is, /ɣ/ occurs before /a/ in Lǔchūn, Nu Quây, and northern Jeu˅g'oe˅ as the reflex of *w and *r; but in southern Jeu˅g'oe˅ /z/ is the usual reflex, and a syllable /ɣa/ does not occur if the lexical item is a noun or a verb.[19] Other such differences seem to reflect different reflexes for particular *Resonants in different dialects. For example, some *C or *ʔ prefixed, *-y-medial *r and *y resonants in Lǔchūn have the reflex /ɕ/, unlike Jeu˅g'oe˅ which in most of the same cases has /j/.[20] Jeu˅g'oe˅ has the reflex /ʃ/ for *hr and one instance of *Cy; but in these cases the *hr > /ʃ/ development is relatively long-standing, as Lǔchūn has merged such /ʃ/ with *Fricatives /ʃ/ to /s/. The Lǔchūn development to /ɕ/ must be more recent than this merger, and has re-created an alveopalatal fricative in Lǔchūn.

In general, *Lateral resonants have /l/ as their reflex in Akha — but for an exception, see *four* (481), and for an instance of the *prefix becoming the Akha initial, see *lick* (630). *Y resonants usually have /j/ as their Akha reflex, but in a number of cases /z/ occurs instead. Similarly, *Voiced fricatives *z and *ʒ usually have /z/ and /j/ as their reflexes, but converse examples do occur. *W resonants most frequently have /z/ as their reflex; there is no /v/ in Akha; there are also instances with /j/, /ɣ/, and even /b/ — the latter possibly loanwords or area words, and hence not really reconstructable for *L. *R resonants show the most variation. The most frequent reflex is /ɣ/, but /ʔ/, /z/ and /j/ are also frequent — more so in Jeu˅g'oe˅ than elsewhere. *hr, as noted, usually has /ʃ/ as its reflex; *k-r frequently has /h/ as its reflex. /g/ occurs in some instances, for example *count* (671), in which a prefixed *g has been reanalyzed as the initial, and the *r as a *medial; *gr regularly has /g/ as its reflex. Part of the reason for such variety in possible reflexes — /ɣ/, /z/, /j/ and /ʔ/ for certain *plain (unprefixed) Resonants — is the phonotactics of Akha — with some vowels, only some of these voiced fricatives may occur.

There are some instances in which Jeu˅g'oe˅ shows an irregular development, replacement, or semantic shift of a *L etymon, but Lǔchūn has a regular cognate; the converse also occurs.

		Lǔchūn	Jeu˅g'oe˅	*L	Comment (on Jeu˅g'oe˅)
horse	(6)	/moˬ/	mah˅/mɔ̃ˬ/	*mray[2] (area)	rhyme irregular
salt	(408)	/tshaˬdɤˬ/	sa˅deu˄ /saˬdɤˬ/	*tsa	(initial irregular)
thousand	(489)	/thɔ˥/	he /he˥/ tah˅/tɔ̃˥/	*toŋ[1] *hundred million*	Lahu loan semantic shift

		Lǜchūn	Jeu˅g'oe˅	*L	Comment (on Jeu˅g'oe˅)
smell bad	(573)	/nɔ˥/	beh˄-eu /bɛ̲˩˧˦/	*?nam^{1}	loss
fly	(659)	/bjɔ˥/	zaw-eu /zɔ˦˧˦/	*byam^{1}	irregular; reanalysis?
near	(751)	/ɳi˩/	daw˅peh /dɔ˩pɛ˦/	*Cni^{2}	loss

In some cases, Lǜchūn has a reflex of one *L form, while Jeu˅g'oe˅ has a reflex of an alternative *L form with the same gloss.

mortar	(240)	/khu˩/	tah˅tsm˅	240 C	*?kri^{1}
			/tɔ̃˩ tsm˥/	240 A,B	*?toŋ^{2} tsum^{1}

There are some etyma whose reflexes in all Akha dialects have initial stops when the *L initial was *nasal*. Such forms may have been influenced by Bisoid languages, which have voiced stops as reflexes of *L *C-prefixed nasals.

bamboo shoot	(296)	a˅bye˄ /a˥bye̲˩/	*(s)myet^{L}
blow	(690)	baw-eu /bɔ˥ɤ˥/	*smut^{H}

Some forms show interesting prefix fusions in all Akha dialects.

lightning	(328)	myaw˄-eu /mjɔ̲˩ɤ˦/	*b-lyap^{L}

which may imply reanalysis as *fire* (329) *Cmi^{2} + *needle* (382) *rap^{L}.

lick	(630)	myeu˄-eu /mjɤ˩ɤ˦/	*m-lyak^{L}

again, fusion which differs from that seen in other Loloish languages.

star	(319)	a˅gui˅ /ʔa˩gɯ˥/	*bkray^{1}

perhaps reanalyzed as *sky* (321) *mo^{2} + *star* (319A) *kray^{1}, fusing to *Nkray^{1} and then developing regularly.

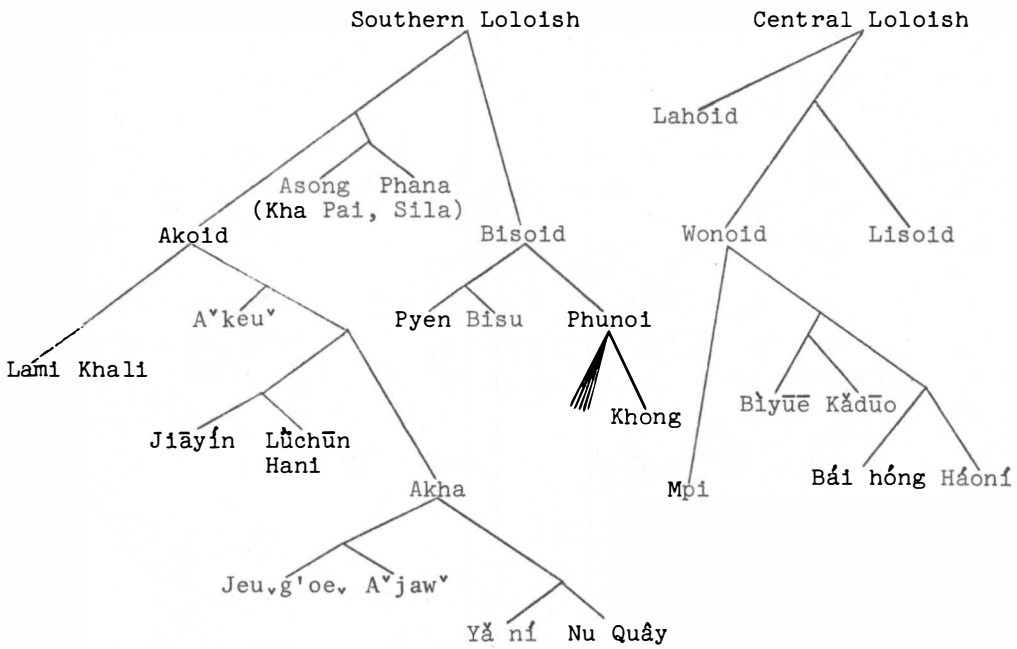
Akha dialects preserve *L *k animal prefix and *ʃ body-part prefix as such, in addition to the *? kinship prefix.

leopard	(14)	/xa˩zi̲˩/	k'a˅zui˅ /xa˩zɯ̲˩/	*k-zik^{L}

This preserved *prefix seems to have caused loss of final *k in the word; see k-dissimilation rule above.

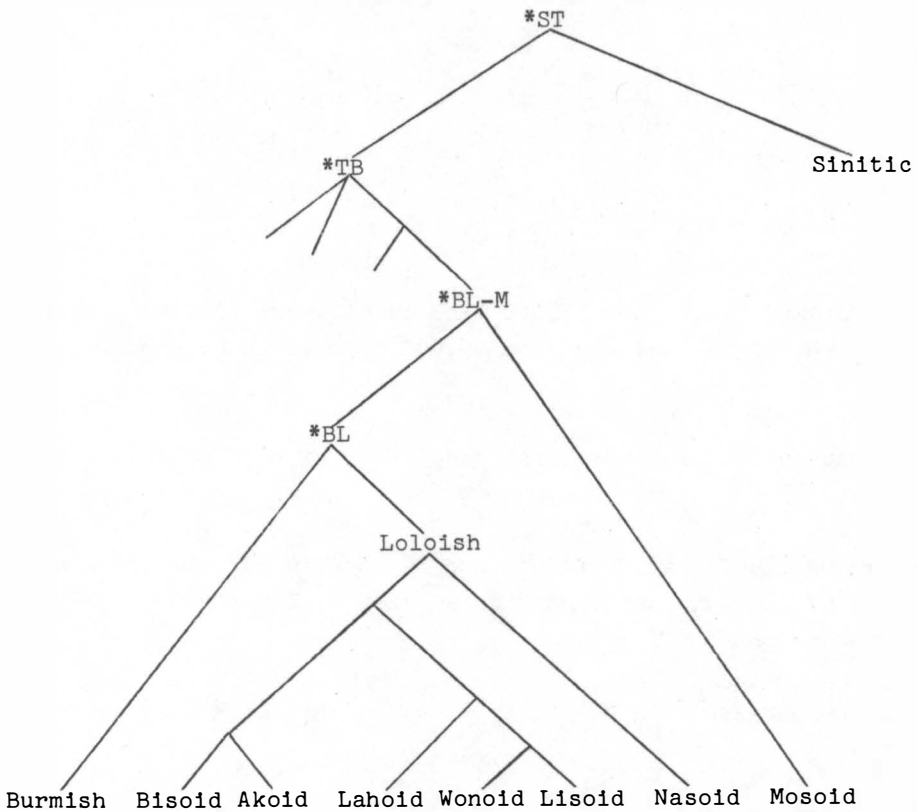
The following chart shows the relationships between various Southern Loloish languages. The branching is based on various criteria: predominantly shared lexical material (Bradley 1975a) and also shared sound changes (Matisoff 1972; Bradley 1975a). The branching relationships shown are intended to indicate genetic relationships; horizontal

relationships on the charts indicate likely contact relationships — sometimes across genetic boundaries, as between Lahoid and Akoid.



Further data on Akoid, Bisoid, and other languages will certainly clarify the genetic relationships within Southern Loloish.

The chart below gives an impression of the genetic relationships of Akha within Proto-Sino-Tibetan (*ST); Proto-Tibeto-Burman (*TB); Proto-Burmese-Lolo/Moso (*BLM); Proto-Burmese-Lolo (*BL), and Proto-Loloish (*L).



For further details of branching relationships within *ST, see Benedict 1972. Bradley 1975b clarifies the relationship between Nàxɪ̄ and *BL. Burling 1967, and various works by Matisoff have explored the reconstruction of *BL; Matisoff, Bradley, and Thurgood have investigated the relationships within *L; see especially Matisoff 1972 and 1973, and Bradley 1975a.

NOTES

1. There are probably about 5,000 Akha in Vietnam, 10,000 or more in Laos, about 20,000 in Thailand, and 50,000 or more in both Burma and China.

2. See Bradley 1969 for the first discussion of Lǔchūn Hānǐ as an Akha dialect.

3. Including Bìyuē, Kǎduō, Háonǐ, and Báihóng in Hú/Dài 1964; also Gāo's study of Yang-wu Hānǐ, and Yuán's study of Woni; see below for further discussion.

4. Lefèvre-Pontalis 1892 Ou-nhi is Akha; but Madrolle 1908 Hanhi is Wonoid.

5. Lewis 1970a IV 764.

6. Madrolle 1908, from 'Province du Haut-Mékhong' (Nam Tha Province).

7. Roux 1924; vocabulary in Lefèvre-Pontalis 1892 is of a similar dialect, as is Yǎnǐ.

8. Lewis *ibid.* 765.

9. Gāo Huánián 'Preliminary Investigation of the Hani Language of Yang-wu' (in Chinese) *Chung-shan University Journal* 1955.

10. Yuán Jiāhuá 'Preliminary Investigation of the Woni Language' (in Chinese) *Frontiers of Human Culture* 1947 (Nankai University, Tientsin).

11. Lietard, A. 'Au Yun-nan, les Lo-lo P'o' *Anthropos-Bibliothek* I.5 1913.

12. With a few additions: p' for aspirated [p^h].

13. Dellinger 1968.

14. Actually Nu Quây g, which in such cases probably represents /ɣ/.

15. However, the A˅keu˅ dialect has undergone a tonal flip-flop, leaving the reflex of *Tone 3 as mid pitch, but reversing the pitch values of the reflexes of *Tone 1 and *Tone 2. *Tones 1, 2, and 3 occur in *open and *nasal-final syllables, while *H (high) and *L (low) tones occur in *stop-final syllables.

16. Reminiscent of the glottal-dissimilation rule of Lahu, Matisoff 1970a; first noted in Bradley 1971.

17. Of course, within Burmese-Lolo Burmese inscriptions and Burmese dialects provide evidence for *-l-. Further detail on the Loloish correspondences is found in Bradley 1975a.

18. No examples of a voiced *ɣ are reconstructed; the *Resonant *r may have had such a realization.

19. But g'a˅ /ɣaˀ/ is the 'classifier for people'(496) even in southern Jeu˅g'oe˅. Differences in developments between different form classes are widespread in *BL languages. For example, Burling 1967 notes a difference in tonal reflexes of *Tone 2 between nouns and verbs in Atsi.

20. Cf. *four* (485) and *stand* (687).

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APPENDIX

	Gloss	Burma	Laos	China		*Loloish
2.	*b.deer*	ci˅ha˅	tsí hà			*kye^{1}
3.	*s.deer*	k'a˅tseh˄	(k'a tse) che	xe˩tse˥		*k-tsat^{L}
4.	*goat*	ci˄myeh˄	(tsi me)chị	a˩tsi˩		*k-cit^{L}
6.	*horse*	mah˅	(moeu ang)màng (moo)	mo˩(V)		*mraŋ^{2} (area)
8.	*buffalo*	a˅nyo˅	(a gno) nhìu p'ừ(le pheu)	a˩ɲu˩	8B	*ŋya^{2}
9.	*cattle*	maw˅ne˅	(mo he˙) nhìu nế (niungnè)		9B	*smyaŋ^{1}
10.	*gaur*	neh˄nyo˅	sán nhìu			*ɲa^{2}
11.	*elephant*	ya ma	(ia ma) yama (niu tseu)			*hya^{3}
12.	*bear*	k'a˅hm˅	k'à(n)hống			*k-Cwam^{1}
13.	*tiger*	k'a˅la˅	(k'ala)k'àlà(kala)			*k-la^{2}
14.	*leopard*	k'a zui˅		xa˩zɿ˩		*k-zik^{L}
16.	*leopard cat*	a˅hah˅	a-háng *fox*		16	*k-roŋ^{1}
17.	*cat*	a˅mi˅	(a mi) a mí (a mi)		17B	*mi^{1}
18.	*dog*	a˅kui˅	(a k'ou)a-k'ừ(akheu)			*kwe^{2}
19.	*wolf*	k'a˅yeh˅	k'ừ si	a˩khɯ˩		*k-wan^{1}
21.	*pig*	a˅za˄	(a ga)gạ (agha)	a˩ɣa˩		*wak^{L}
22.	*wild pig*	za˄te˅	gà thề			
23.	*monkey*	a˅myo˄	(a mieo)á-miêu	a˥mju˩		*myok^{L}
25.	*gibbon*	a˅myo˄myo˄na˅	miều na			(23 + 503)
29.	*otter*	ui˅shm˅	ʔớ shống	ɯ˥sɔ˥		*Cyam^{1}
30.	*porcupine*	ho pu˅	hu p'iú			*ʔpru^{1}
31.	*rat*	ho ca˄	(ho kou oeu)hu chạ			*k-rwak^{H}
43.	*squirrel*	(ho ca˄)	húxa mìpồ			(*ʃu^{1})
46.	*rabbit*	lah˅/tah˅la^	shé			
48.	*bird*		(a t'i) (a ji)			*sŋyak^{H}
49.	*chicken*	ya ci^	ha ma (akha)			*k-rak^{H}

	Gloss	Burma	Laos	China		*Loloish
51.	*dove*	k'a˅k'oe˅	khǒ-khò		51A	*k-ʔko^{2}
52.	*crow*	aw˄a˄	oạ			*ʔak^{L}
53.	*duck*	haw˅gu˅	(ovoi)o-ha(o ha)			(*bay^{2}/gap^{L})
55.	*sparrow*	k'a˅ja˅	a chí			*Nja^{1}
57.	*partridge*	geu˄	gợ(n)			*rök^{H}
58.	*rooster*	ya poe˅	(ga fo) hap'ơ		(50+)	*po^{1}
	jungle fowl	ya nyi˅	ha shộ			
	quail		há nhị			
	turtle dove	k'a˅koe˅lu˅ju˅	khồ khờ lồchu			
60.	*snake*	a˅law˅	(alo) a-lo (hala)		60B	*laŋ^{1}
64.	*python*	li˄	li-lị-ma			(*lay^{1})
66.	*frog*	k'a˅pa˅	(kafa) khà p'à			*k-ʔpa^{2}
68.	*crab*	a˅ka	a-k'a		68A	*ʔkra^{3}
70.	*fish*	nga˅	(ngasa) ngà shà (la sha)	ŋa↓de˥		*ŋa^{2}
71.	*insect*	a˅boe˅	hlêk-cồ			*bo^{2}
72.	*fly*	pu˅sa^	p'u să			*Cbrut^{L}
		a˅ma˄	a-mạ			
73.	*ant*	a˅ho	a-hộ			*p-rwak^{H}
74.	*louse*	sheh˅	shé			*xan^{1}
75.	*leech*	yeh˄	hị-ệ			*k-rwat^{L}
76.	*termite*	a˅i˅	a-yì			*k-ru^{2}
77.	*bee*	bya˅	bia	bja↓		*bya^{2}
78.	*butterfly*	a˅lu	a-ghí/chenhị			*Clu^{3}
79.	*spider*	a˅g'o˅lo˅ma	a-chu-lu-ga(n)		79B	*Ngu^{1}
	flea	a˅gaw^	a-gŏ(n)	a↓go˧		—
82.	*horn*	u˅coe˅	(tsouo)ù tsó			*kro^{1}
	fish scale	g'aw		ɣo˧(T)		—
84.	*tail*	daw˅mi˅		dɔ↓mi ↓(V-1)		*daŋ ^{1}mri^{2}
86.	*egg*	ya u^	ha u (kha ou)			*ʔu^{3}
88.	*head*	u˅du˅	(ou tou) u tu (oudou)			*ʔu^{2}ʔdu^{2}
89.	*hair (head)*	tseh˅kah˅	(tsek'ang)chek k'ang (sekhung)			*tsam^{1}kriŋ^{1}
90.	*hair (body)*	ca˄hm		mɔ↓(V,T)		*ʔmwe^{3}
92.	*eye*	mya^nui^	(mia noeung)miến nư (miè mung)	mja˧		*Cmyak^{H}
93.	*nose*	na˅meh˅	(na me) nà me	na˥me˥		*sna^{1}(kaŋ^{2})
	forehead	na˅k'aw˅	na-kho		*nose*	*sna^{1}kaŋ^{2}
96.	*teeth*	seu˅	(so) sô (seu)	sɤ↓	96A	*swa^{2}
97.	*tongue*	meh˅la˅	miè lá (meu ha)			*ʔl(y)a^{1}
99.	*cheek*	ba˅ba	bà ba			*ba^{2}

	Gloss	Burma	Laos	China		*Loloish
100.	*chin*	meh˪tah˪	miè-tà		100B	*ʔdoŋ^{2}
101.	*beard*	meh˪mah˪	(me mang)miè-mà			(cf.90)
102.	*ear*	na˪baw˅	(na pa)nà bó (na bo)	na↓bo˥		*(C)na^{2}ʔbaŋ^{1}
105.	*throat*	kaw˪lah˅	(k'o no) k'à-lá		105A	*ʔkroŋ^{2}104*liŋ^{1}
106.	*chest*	k'ah˪	k'àng(n)			*koŋ^{2}
107.	*shoulder*	ba˄pu	(ba fou) bà-p'u			(*Crum^{2})
108.	*arm*	a˪la˄	(la dou) là tu		(111+)	*ʔbu^{2}
109.	*elbow*	la˄tsui˄	là tsṵ	ts˩↓ *joint*		*Cdzik^{2}
111.	*hand*	a˪la˄	(la fu) là p'ú (laga)	a↓la↓		*lak^{2}
113.	*finger*	la˄noe˅	(la no) là nué			*sɲo^{1}
115.	*finger nail*	la˄sah˪	(la sang) là sàng	la̲↓sɔ↓		*siŋ^{2}
117.	*back*	da˅tsui˄	tá(n)tsṵ *(backbone)*			—
118.	*back (lower)*	jo˄	dồ the			*gyaw^{2}
120.	*navel*	ca^tah˅	tsa pé		120B	*ʔdoŋ^{1}
121.	*thigh*	sha˪pya˪	chàp'ià (chapa)		121A	*Cpyoŋ^{2}
124.	*leg*	baw˅law	mồ gô(n)			—
125.	*knee*	paw˪tsui˄	p'ồ tsṵ			(*du^{3})
127.	*foot*	a˪kui˅	shà khứ (sekheu)	a↓khɯ˥		*kre^{1}
	buttock	daw˪dah˅	bià-ga(n)		121B	*Ctoŋ^{1}
133.	*belly*	u˪ma^	ù mă			*wam^{2}
134.	*skin*	ba^k'o^	shà cô			(*re^{1})
135.	*meat*	sha˪ji˅	shà chí	sa↓		*xa^{2}
136.	*bone*	sha˪yoe˪	sha giề			*ʃ-ro^{2}
138.	*breath*	sa˄		sa̲↓		*Csak^{L}
140.	*brain*	u˅nm˄	u-nệ	u↓nɔ̲↓(T-1)		*Cnok^{L}
141.	*lungs*	sha˪paw˄	pộ	po̲↓	141A	*ʃ-pap^{L}
142.	*heart*	nui ma	sìk'àng			*ni^{3}
143.	*liver*	sha˪tsah˪				*ʃ-siŋ^{2}
145.	*stomach*	baw ma	pô ma			(*ʃ-wut^{L})
146.	*intestines*	baw u˅	bô-u			*ʔu^{1}
147.	*blood*	shi˪	(s'i)			*se^{2}
148.	*bile*	peh˪kui˅	p'ia k'ứ			*b-ʔkre^{1}
155.	*milk*	a˪coe˅	(a tio)a tsé		155A	*co^{1}
156.	*person*	tsaw˅ha˪	(tsoha) tsố hả (tso)	tsho˥		*tsaŋ^{1}
163.	*elder*	tsaw˅maw˪	nang-o		(156+535)	
164.	*friend*	tsui˄yeh˅	chư yế			*kyaŋ^{2}
166.	*widow*	mi˪coe˪law˅ma	mì tsờ			*mi^{2}co^{2}
	widower	yo coe˪	biá tằng			—
167.	*headman*	la˪ja˪	chờ-ma			—
	regional headman	bu˪seh˅	sam-p'a			*siŋ^{1}
168.	*priest*	dzoe˪ma	woang p'a tchư		365A	*Ndzo^{2}

	Gloss	Burma	Laos	China		*Loloish
172.	*soldier*	yeh˅		ma̲↓za↓		*Cmak^{L}
173.	*male suffix*	pa˅/poe˅	pà	phy˥		*?pa^{2}
174.	*female suffix*	ma	(ma)ma			*Cma^{3}
190.	*Gr F*	a˅baw˅	(a po) a pó			(*?-po^{2})
191.	*Gr M*	a˅pi˅	(a fi) a p'ì			*?-pi^{1}
196/7	*M B*	a˅ g'oe	a gô			*?-ri^{3}
199.	*MyZ*	a˅mui	a mư			*?-me^{3}
200.	*M*	a˅ma	(a ma) a ma (a ma)			*?-ma^{3}
201.	*F*	a˅da	(a da)a ta (a ta)			*?-dya^{3}
202.	*eB*	a˅yui˄	(a iœu)a yự			*?-wik^{L}
203.	*yB*	a˅nyi˅	(a ni) a nhí			*?-ɲi^{1}
204.	*eZ*	dm˅ma	a pa/túma		205	*?-snam^{1}
206.	*S*	a˅li/za˅yo	yà hiêu	za↓		*ʒa^{2}
207.	*D*	a˅bu˅	(za mi)yà mì			*ʒa^{2}Cmi^{2}
	WZ	a˅tsu		a↓tshu˥	204B	*?-tsu^{3}
216.	*wife*	za˅mi˅za˅	(miza)mì zà			*ya^{2}
217.	*husband*	k'a˅dze˅za˅	(k'adji)hè chí			(*plaŋ^{1})
225.	*hat*	u˅k'o˄	(ouko) ồ khô (la heu)			(*?tsi^{2})
226.	*turban*	u˅dzah˅	(outo) ù to/u - tsang			(*ni^{2})
227.	*shirt*	peh˅k'ah˅	(fe k'ang) p'iá k'ằng(n) (pi hang)			*bun^{1} *(area)*
228.	*pants*	la˄di	(la di) là tsờ (la gha)			*?la^{2}
230.	*shoes*	seh˅naw˄	sền no			*hap^{1}
231.	*skirt*	pi di	la gà (Nu Quây *woman's pants*)			*Cti^{3}Ndu^{1}
232.	*belt*	jo˄pa˄	cho-chang			—
234.	*earring*	na˅saw˅/ na˅tah˅	(nà pó = *ear*)			(*k-wa^{2})
235.	*ring*	la˄beh˅	là cấng			*?ban^{2}
236.	*bracelet*	la˄du˄	(là dou) là dụ			(*Cgoŋ^{1})
237.	*necklace*	law˅dah	yiền sồ			—
238.	*button*	peh˅taw˄	p'iết tsư			(*Cdup^{2})
239.	*cowrie*	ju˅ma/hu˅si˅	chú(n) sì			*k-rwe^{1}
240.	*mortar*	tah˅tsm˅	thắng sống	khu↓	240A/B	*?toŋ^{2}tsum^{1}
					240C	*(?)kri^{1}
242.	*pot*	oe˅lah˅	cừ(n)tsá			*o^{2}
243.	*tripod*	shm˅kui˅	sùng k'ứ		(480+127)	
248.	*chopstick*	ju da˅	chu tá			*ju^{2} (Chinese)
249.	*chair*	k'aw˅bo^/ nui˅gaw˅	khồ bo (na gà)			*kum^{2}
250.	*table*	haw˅jeh	(padopato)(daukha)			—

	Gloss	Burma	Laos	China		*Loloish
251.	*dish*	k'mᵥmaᵥ	(hồ cư)k'ôma			(*ʔbyap^{H})
253.	*basket*	k'aˆjoˆ/k'aˆkaˇ /kaˇya	pơ thú (pa thou)		253A	*krak^{H}
256.	*mat*	gawᵥpu/huˇseu	cồ p'u (oua fou)			*Ngu^{2}ʔpu^{3}
257.	*knife*	mi cehˇ	mià/mià shống (mia)		257B	*smi(a)^{3}
260.	*axe*	deuˆhaᵥ	tsì			*cin^{2}
264.	*bow*	caᵥoeᵥ				*le^{2}
265.	*crossbow*	kaˆ	(ka)			*krak^{H}
266.	*arrow*	kaˆmyaᵥ	(ka mia)		266A	*Cmla^{2}
267.	*gun*	miᵥbeuˆ	mià bư		(329+704)	
275.	*banana*	nga behˆ	ngà be a sì		275B	*sŋak^{H}
276.	*bean*	aˇnuiˆ/aˇbehˆ	a bẹ *haricots*	a˥nɯ̲˧		*snök^{H}
277.	*chilli*	laˏpiˇ	là p'ì			(area)
278.	*fruit*	aˇsiᵥ	(a si) a sì	a˥si↓		*si^{2}
279.	*rice (grains)*	k'aw/cehˇpyuˇ				*kaw^{3}
280.	*rice (paddy)*	cehˇ	ho chệ (tchè)	tshe˥I		*can^{1}
281.	*rice (cooked)*	hawᵥ	ho (ho)	ho↓	281B	*haŋ^{2}
282.	*cabbage*	g'awᵥpaˏ	gò(n)pạ			*raŋ^{2}
284.	*taro*	mahᵥ				*ʔmun^{1}
286.	*garlic*	sehˇpuˇ	(saipo)			*swan^{1}
287.	*liquor*	jiˇbaᵥ	(dji ba) chi pa *knife*			*Nji^{1}
290.	*corn*	aˇdu	(a tou) a tu			(*ʃa^{1}Ckok^{L})
292.	*potato*	a luˇsiᵥ yaᵥiˇsiᵥ	bìu ma			(loan)
295.	*bamboo*	zaˆbawˇ	hàbó/ga		295A	*wa^{2}
296.	*b.shoot*	aˇbyeˏ	hạ bệ			*smyet^{L}
301.	*flower*	aˇyehˆ	(aje) a ye	a˥je̲˧		*Cwat^{H}
302.	*grass*	moˏ/jaˆgaˆ	(ia mou) ù chự	dzạa˥ya↓ (T-1,2)		*Cmrok^{L}
303.	*tree*	aˇbawˇ	(bo) a bố (a bò)		303B	*baŋ^{1}
304.	*branch*	aˇpyaᵥ/aᵥlaˏ	a lạ			(*Cgak^{L})
305.	*leaf*	aˇpaˏ	(a pa) a pạ	a˥po̲↓		*Cpak^{L}
306.	*root*	duᵥciˇ	a tsí		306A	*Nce^{1}
307.	*thorn*	aˇgah	dá tsiạ			(*cu^{2})
308.	*seed*	aˇyoeᵥ			308A	*yo^{2}
309.	*bark*	baˏkˈoˏ		a˥xo̲˧ (V-2)		Cguk^{L}
312.	*mountain*	gawᵥjawᵥ	(ga da) cô-chồ (ga da)			(*kaŋ^{1})
313.	*valley*	gˈaᵥlawᵥ	lố dà			(*Ckuk^{L})
314.	*river*	lawˇbaᵥ	(lo ma) lố ma			*laŋ^{1}
317.	*sun*	nahˇma	(no ma) ná(n)ma (namma)		317-2	*(ʔ)ne^{1}

	Gloss	Burma	Laos	China		*Loloish
318.	*moon*	ba la	(pa la) pá la (pela)			*b-la^{3}
319.	*star*	a˗gui˅	(a goeu) a cư (agheu)	a˩gw˥		*Ckray^{1}
320.	*cloud*	m˗dm˅				*Ctim^{1}
321.	*sky*	m˗/u˗	(n'ou)u(n) (hun)			*mo^{2}
323.	*earth*	mi˅tsa˗	(mi sa) mí tsà (mitsa)			*?m(r)e^{1}tsa^{2}
324.	*rain*	u˗yeh˅	(oumie·ie·) ở - yế			*ywa^{1}
326.	*wind*	ja˗leh˅	(cha le) chà-lế			(*le^{1})
	lake	lah	la ma		315	*loŋ^{3}
327.	*thunder*	m˗je˗	(oumjichi) u chì			*gro^{2}
328.	*lightning*	m˗myaw˄	u miệu			*b-lyap^{L}
329.	*fire*	mi˗dza˗	mì chà (mi tià)	mi˩dza˩		*Cmi^{2}
332.	*charcoal*	k'a˗g'eu˗	khà gờ		332-2	*rut^{L}
333.	*smoke*	u˗k'oe˗	giở k'ờ *fog*/ mià k'ồ *smoke*			*ko^{2}
334.	*sand*	k'a˅shui˄	(k'a si)			*say^{2} (area)
336.	*water*	ui˅cu˄	(ou tsou) ù chụ (outiou)			*re^{1}
337.	*rock*	k'a˗lo	(k'alo)k'à lô (khalo)			*k-lok^{L}
338.	*sunshine*	u˗tsa˅	ờ tsá-tsá-nhi		338A	*tsa^{1}
339.	*waterfall*	tsaw˗	ú chụ tsôp'ờ			—
341.	*house*	nym˅	(iong) nhúng (larheu)			*yim^{1}
344.	*door*	la˅g'o˄	(iu k'e) lố ô	ɣo˧xe˩ T-1	344B	*ko^{3}
347.	*roof*	nym˅m˗	mí bơ			—
351.	*ladder*	daw˅dzm	gô(n)bà-cá chông			*(N)tsam^{3}
352.	*granary*	ceh˅ji˅	tsa chí			*?gyi^{1}
353.	*fence*	km˅ceh˅	k'ống			*kram^{1}
355.	*village*	pu	(p'ou) p'u		355D	*pu^{3}
358.	*country*	mi˅ k'ah˗	mi-k'ang			*smi^{1}
360.	*God*	a˗poe˗mi˗yeh˅/ m˗sa˅				(*re^{1}sa^{1})
361.	*spirit*	neh˄	nê	ne˩xa˩		*Cnat^{L}
362.	*soul*	sa˄la˅/su˅la˅	sông-la			*?la^{1}
372.	*resthouse*	sa˅la pa˗				(Pali)
	bamboo star	da˅leh˅	da leng			
375.	*drum*	tah˗	thàng(n)	cf. 626		
376.	*gourd organ*	la˄je˗	lền chề			(*snaŋ^{2})
377.	*flute*	meh˗li˅	mền pà		377B	*p-lwe^{1}
379.	*blanket*	a˅bui/bui ta˅	ắ(n)bư			*bo^{3} (area)
380.	*pillow*	u˗g'm˗	ùtù-ùgùng(n)			*Ngum^{2}

	Gloss	Burma	Laos	China		*Loloish
382.	*needle*	a˗g'aw˄	gọ	a˩˨yo̲˩		*rap^{L}
383.	*thread*	sa˗kah˅	sà k'ắng	cf. 89		
	cotton	sa˗la˗	sà là			
384.	*fat/oil*	tsi˅	tsi			*tsi^{1}
385.	*pipe*	gaw˅lu˗	gó(n)tợ (latsou bodo)			*?gu^{1}
387.	*fan*	baw seu	pồ su			(*pay^{2})
389.	*(rope)*	a˅ca˄	á chạ			*?cak^{H}
390.	*trap*	(za)/tah˅-eu			390B	*Ctoŋ^{1}
					390A	*wa^{3}
391.	*poison*	do˄		du̲˩		*(C)dok^{L}
393.	*bridge*	law˅dzm˅		lɔ˥dzɔ˥	V-1	*dzam^{1}
395.	*broom*	ya˄pyaw˅	yê tchê	cf. 733		
398.	*boat*	law˗	(lo) chlọ	lo˩		(*?li^{1})
401.	*silver*	pyu˅	(fiœu) p'iú		401A	*plu^{1}
402.	*gold*	shui˅	(sœu) mia k'à		402A	*hrwe^{1}
403.	*iron*	shm˅	(song) shống			*xam^{1}
404.	*copper*	gui˗ne˅	(kouœ) cừ	gɯ˩		*gre^{2}
405.	*cloth*	sa˗pa˅	sà p'á			*pa^{1} (area)
406.	*tobacco*	ya k'aw˗	(ia k'o) (to sou)		406A	*ya^{3} (area)
407.	*tea*	law˅baw˗	lố bồ	la˩pe˧		*la^{1} (area)
408.	*salt*	sa˗deu˄	chà dợ (sa deu)	tsha˩dɤ˩	I-1	*tsa^{2}
409.	*sugar*	sa˗deu˄coe˅	p'ò chạ-chạ pa (po tcheu)			—
414.	*dry field*	ya˅	(ia) hiá			*hya^{1}
415.	*wet field*	deh ma	(de ma) te ma (hè dè)			*?dan^{3}
416.	*path*	ga˅ma	(ga ma) gá ma			*?ga(ŋ)^{1}
418.	*language*	daw˗		do˩	418A	*daŋ^{2}
419.	*name*	tsaw˅myah˅		sa̲˧		*?myiŋ^{1}
421.	*price*	a˅poe˗		phy˩		*po^{2}
424.	*thing*	myaw˗	cộ		424A	*Cm(y)u^{2}
426.	*work*	myaw˗	mià		426A	*mia(w)^{2}
430.	*who?*	a˗su˅		a˩so˥	V	*?əsu^{1}
432.	*when?*	a˅myah	hà miêng			(*?ətak^{H})
433.	*where?*	a˗ga˅	hà cà chô ông			(*?ə + 416)
435.	*how many?*	a˅mya˄	ha mịa-u(n)			(*?ə + 752)
438.	*I*	nga˅	nga(n)	ŋa˥		*Cŋa^{1}
439.	*you*	naw˅	no	no˥		*naŋ^{1}
440.	*he*	a˗yaw˄	ay yộ			*ʒaŋ^{2}
441.	*someone else*	su˅	shứ			*su^{1}
445.	*right*	la˄ma˄	a má			—
446.	*left*	la˄ca˅	a tsa		445	*?ya^{1}

	Gloss	Burma	Laos	China		*Loloish
447.	*in front*	meh˧shi	mì si	a˩ɕe˩ T-2	447-2	*hre^{3}
448.	*behind*	meh˧nah	ná kha			*ka^{2}ʔnok^{L}
459.	*here*	heu ga˅/ hah-ah˅	hi cá			—
460.	*side*	paw	p'ọ/p'o			*paŋ^{2}
461.	*day*	a˅nah	(no)nă(n)	nɔ˥		*(ʔ)ne^{3}
462.	*night*	u˧ci˄	ừchi	ɔ˩ tɕi˩ T-1	V-1,	(*ʔrak^{L})
463.	*early*	na˄-eu		na˩		*Cnak^{L}
464.	*morning*	u˧shaw˧	a cứ			*ʃaw^{2}
465.	*dusk*	u˧ci˄taw	chì thọ			(*Cput^{L})
466.	*today*	i˧nah	ừna(n)			—
470.	*yesterday*	mi˅nah	mí na(n)			*ʔ-mi^{1}
472.	*day before yesterday*	hu˧nah	fù na(n)			(*ʔʃik^{H})
473.	*tomorrow*	nui shaw˧	nưshô			(*ʔpraŋ^{2})
474.	*day after tomorrow*	sa˅peh˧	sá p'è		475	*pin^{2}
476.	*mouth*	ba la	bala			(cf.318)
477.	*year*	a˅k'o˄	gộ	xu˩	477B	*Ckok^{L}
478.	*one*	ti˧/ti˄	(t'i)tị/tì (ti)			*ti^{2}
479.	*two*	nyi˧/nyi˄	(ni)nhị (nhi)	ȵi˩		*sni^{2}
480.	*three*	sm˧/sm˅	(song)sống(sung)	sɔ˥		*Csum^{2}
481.	*four*	oe˧	(hœu) ở (eu)			*bli^{2}
482.	*five*	nga˧	(nga)ngà(n) (nga)	ŋa˩ T		*ŋa^{2}
483.	*six*	k'o˄	(kou)cô(ko)	ku˩		*Ckrok^{L}
484.	*seven*	shi˄	(s'i) tchị (chi)	s˩˩		*Cʃik^{L}
485.	*eight*	yeh˄	(ich) hiệ (hié)	ɕe˩		*Cyet^{L}
486.	*nine*	g'oe˧	(g'œu) gờ (houeu)	ɣy˩		*go^{2}
487.	*ten*	tse˅	(tse)tsế (ché)	tshe˩ V		*tsay^{1}
488.	*100*	ya˅	(ia)hiá(tiha)			*Cra^{1}
489.	*1000*	he˅/tah˅	(ba)thắng(titang)	thɔ˥		*ʔtoŋ^{1}
490.	*10,000*	mui˅/myeh˅	mía			(Dai loan)
494.	*clf. general*	hm˧	mà			*ma^{1}
496.	*clf. people*	g'a˧	gà	ɣa˩		*ra^{2}
498.	*clf. round objects*	si˧	sì			*si^{2}
499.	*half*	pa˄		pa˥		*pak^{H}
	cave	lo byoe		by˥ (I)		
	latch	g'o˄ dah˧		ɕo˩		
	mugwort			be˥		
	chestnut	tsui˄ si˧		tsɤ˩ si˩		

	Gloss	Burma	Laos	China		*Loloish
	cardamon			dɤ˩˧ xɤ˩˧		
	top of	la˄ ta˄		a˩˧ ta˥		*?dak^{H}
	drop	dza˄		dza˥		*dzak^{H}
	pen	ku˄		ku˥		
	ear of grain	ceh˅nm˅		nɔ˥	(?)	*n$\overset{i}{\underset{u}{}}$am^{1}
	bug	boe˅ha˅/ boe˅k'a˅		by˩˧za˩˧	I-2	
502.	*red*	(yaw)ne˅	(ione) yo né	ɲi˥		*?ni^{1}
503.	*black*	(yaw)na˄	(io na) yo nạ	na˥		*Cnak^{H}
506.	*yellow*	(yaw) shui˅	(io s'œu) yotchú	s˩˥		*hrwe^{1}
507.	*white*	(yaw)pyu˅	(io pa) yo pa	phju˥		*plu^{1}
508.	*green*	(yaw)nyoe˅	(io ho) yo nhé			*?ɲo^{1}
509.	*grey*	(yaw)pui˅	(io p'ou) yɑp'u *(blue)*			*pe^{1}
512.	*smell good*	yaw saw	yɑ tso			—
513.	*smell bad*	yaw sha˅	beh˄la˄-eu	nɔ˥		*?nam^{1}
514.	*cold*	ga˄-eu		ga˥		* grak^{H}
515.	*cool*	yaw tseh˄		tse˩˧		(*Ngaw^{1})
516.	*warm*	yaw lm˅		lɔ˥		*lum^{1}
517.	*hot*	tsa˅-eu	tsá (tia)			(cf.338)
520.	*ashamed*	sha˄daw˅-eu	chạ tó			*srak^{L}?daŋ^{1}
523.	*tired*	g'a doe˅doe˅-eu		tɑha˩˧		—
524.	*angry*	nui ma peh˅	nɯma p'è			(*?(d)zup^{H})
526.	*narrow*	na˄-eu	yɑthè	na˩˧		*?nak^{L}
527.	*wide*	yaw je˅	yɑké(g)			*glay^{1}
528.	*soft*	nah˅-eu	yɑbẹ	nɔ˩˧		*Cnu^{2}
529.	*hard*	g'ah˅-eu/ k'a˄-eu	yɑ-gắng(n)	xa˥		(Dai)
530.	*flat/thin*	ba˅-eu	yɑbà	ba˩˧		*?bra^{2}
531.	*thick*	tu˅-eu	yɑthu			*tu^{1}
532.	*fat* (V)	tsu˅-eu	yɑtsú	tshu˥		*tsu^{1}
533.	*thin (person)*	yaw jeh	yɑhiạ		533B	*Cjok^{L}
535.	*old (person)*	maw˅-eu	mồ	mo˩˧		*maŋ^{2}
536.	*new*	yaw shui˄		s˩˧˩˧		*C∫ik^{L}
538.	*straight*	daw˄coe	yɑto	do˥	538A	*(C)dwaŋ^{1}
539.	*crooked*	g'o˄-eu		ɣu˩˧		*gok^{L}
540.	*wet*	nyi˄le˅-eu/ a˅-eu	{chi / k'ia pụ *get wet*	dʑe˥	540A	*(C)nat$^{L/H}$
541.	*dry*	gui-eu/ko˄-eu		gɯ˥	541B	*gwe^{3}

	Gloss	Burma	Laos	China		*Loloish
543.	*sharp*	ta^-eu		ta˩		*tak^{H}
	dry in sun	law^-eu		lo˨	(?)	*lap^{L}
547.	*full*	byah-eu		bjɔ˩		*Nbliŋ^{3}
548.	*spicy*	pi˅-eu		tshi˥		(loan)
	astringent	yaw peh˅		phe˥		—
550.	*bitter*	k'av-eu	yơk'ứ	xa˨		*ka^{2}
551.	*sweet*	cœ˅-eu	yơtsə̂	tɕhu˥V		*kyo^{1}
552.	*rotten*	bu^-eu		(dze˩'rot)	552A	*Nbup^{L}
553.	*alive*	deh^-eu		de˨		*dat^{L}
554.	*beautiful*	haw mui˅-eu	yơchà			— z
556.	*bright*	bya-eu	yơcứ			*ba^{3}
557.	*crazy*	u˅ (i˅)-eu	chồ thàng		557A	*ru^{2}
558.	*dirty*	ci˅jaw^-eu	mà shó		558A	*kre^{2}
	clean	yaw shaw˅	yơshớ			—
559.	*drunk*	(ji˅ba˅)yeh^-eu	chí pà yiện			*yet^{L}
560.	*enough*	lo^-eu	lọ	lu˨		*lok^{L}
561.	*expensive*	yaw k'a^	p'ờnhi		561A	*kak^{H}
562.	*fast*	gah˅-eu/ yaw kaw˅	ʔk'ố		562A	*Ngi^{1}
563.	*good*	yaw mui˅	yơmùng yơsa (meu)	mɯ˨	563A	*ʔmwan^{2}
564.	*heavy*	yaw kah	yơk'iang			(*Cle^{2})
	light	yaw pya˅	yo p'iá			—
566.	*lazy*	bya˅-eu/doe˅-eu	nhế-gờa			*Nbyaŋ^{2}
567.	*round*	g'aw˅-eu	yơlăng(n)			*woŋ^{2} (area)
569.	*strong*	deu˅-eu/ g'av k'a^-eu	ngà(n)kha(n)pố			—
571.	*blind*	mya^beh^beh^-eu	mia bịa			(*Cju(k))
572.	*dumb*	av byah˅/ av dzaw˅	a chô			(*a^{2})
573.	*deaf*	(nav baw˅) baw˅-eu	nà bồ			*baŋ^{2}
576.	*cough*	tsoe˅-eu	ơsơsơ	tshy˨	576A	*tso^{2}
577.	*vomit*	peh^-eu	ù pe pẹ	pe˨		*Cpat^{L}
583.	*hear*	ga˅-eu	(há hà)	ga˨		*gra^{2}
584.	*itch*	dzui^-eu		dz̲ɿ˩	584B	*Ntsik^{H}
585.	*scratch*	pya^eu	pia			prak^{H}
	rake	ka^-eu		ka˩		Nkrak^{H}
586.	*dream*	yu^ma^ma^-eu		ju˨ma˩		*Cmak^{H}
587.	*think*	noe˅-eu du˅-eu				(*Ndaŋ^{2})
589.	*remember*	jui˅-eu/noe˅ ta˅-eu	noề thà			(*Ndaŋ^{2})

	Gloss	Burma	Laos	China		*Loloish
590.	*know*	si˪˅-eu	sì nha	sɿ˩		*si^{2}
591.	*forget*	ngeh˅-eu	nghe			(*me^{3})
593.	*understand*	si˪˅nya-eu	(sì nhǎ)			(*liŋ^{1})
594.	*look at*	haw-eu	hô	xu˥	594B	*haŋ^{3}
595.	*look for*	sha˅-eu	tsô ʔó			*k-ra^{1}
596.	*see*	maw˅-eu	mó́	xu˥mo˥		*ʔmraŋ^{1}
597.	*be born*	baw-eu	p'ù			*baw^{3}
598.	*live*	jaw˅-eu	chô			*jya^{2}
599.	*die*	shi˅-eu	(s'i)shí-ợ			*ʃe^{1}
601.	*borrow (money)*	pa˅-eu	p'á́			*kye^{2}
602.	*exchange*	pa˅-eu	p'á́	pha˥		*ʔpa^{1}
603.	*buy*	zeu˅-eu	gơ			*way^{1}
604.	*sell*	ah˪˅-eu	a			*ʔroŋ^{2}
605.	*give*	bi˄-eu	bì	bi̲˩		*be^{2}
606.	*take*	yu˅-eu	yú			*yu^{1}
609.	*get*	za-eu	yạ			*ra^{3}
610.	*have/exist*	jaw˅-eu/ ja^-eu	cha/(tia)	dʑa̲˥		(*jaŋ^{1})
612.	*marry*	sheu˪˅da^-eu	(gala *marry*) (sha ma *marriage*)			—
614.	*return*	g'o˄-eu	gộ(g)			*Ckok^{L}
615.	*steal*	k'oe˪˅-eu	k'ồ	xy˩		*ko^{2}
616.	*destroy*	pya^-eu	pia			*pyak^{H}
617.	*clear field*	ji-eu/ mya˪˅-i˅-eu	hiá mộ			—
618.	*chop*	k'eh˄-eu/ byeh^-eu		xe̲˩	A/B	*Ncik^{H}/ʔbyak^{H}
619.	*dig*	du˪˅-eu/ k'ah˪˅-eu	tù	du˩		*Ndu^{2}
620.	*plant*	ka-eu	k'ia			(*Cmi^{1})
621.	*weed*	mo˪˅-eu		mu̲˩		(cf.302)
622.	*reap*	yeh˪˅-eu	yiền	je˩		*rit^{L}
623.	*cut*	deu^-eu/ tseh^-eu	dợ	tse̲˥		*ʔdök^{H}
624.	*pick fruit*	pya^-eu	chợ			(*Cxak^{L})
626.	*pound*	tah˪˅-eu	thàng	thɔ˩	626B	*ʔtoŋ
627.	*pile up*	bym˅-eu		bɔ˥I,T	627A	*byum^{1}
629.	*eat*	dza˪˅-eu	(tza) chà(tsa)	dza˩		*dza^{2}
630.	*lick*	myeu˄-eu				*m-lyak^{L}
631.	*drink*	daw˅-eu	(do)tố(to)	do˥		*Ndaŋ^{1}
632.	*smoke*	daw˅-eu/ shu^-eu	(do) (to)			*ʃuk^{L}
633.	*suck*	cu˄-eu		tsu̲˥T,I		*Ccut^{L}

	Gloss	Burma	Laos	China		*Loloish
634.	*bite*	tseh˄-eu/ kaw˄-eu	cộ	ko˩˧	634B	*Ckuk^{L}
635.	*chew*	g'o˅-eu	gô-o		635A	*gwa^{2}
636.	*swallow*	myo˄-ah˅-eu	thung			*mlok^{L}
637.	*hungry*	haw˅meh˄-eu	hồ mệ	me˩˧		*Cmwat^{L}
638.	*thirsty*	i˅cu˄meh˄-eu	ú chù mẹ o			(*Csip^{L})
639.	*boil*	ca˄-eu/ bui˅-eu	yabia/bứ	tɕa˩˧	639A 639B	*Cdzak^{L} * bi^{1}
640.	*fry*	lu˅-eu		by˧/lu˥		(*g-raw^{1})
641.	*roast/scorch*	ku˅-eu		khu˥		*?gaŋ^{1}
643.	*smoke/dry*	law˄gui-eu	chlộ			—
644.	*steam*	sa˄-eu		sa˩˧ (cf.138)		*Csak^{L}
646.	*pour*	sheh^-eu/ sheh˅-eu	k'ắng			*xwan^{2}/xwat^{H}
647.	*go*	i˅-eu/le-eu	y-ơ/i			*?ay^{1}
648.	*walk*	cah-eu/zo˅-eu	y-ơ/ga lế	zu˩˧	648A	*Njo(ŋ)^{2}
649.	*come*	la˅-eu/oe-eu	lá	la˥		*la^{1}
650.	*run*	coe˅ (ceh^	kê			(*p-re^{2})
651.	*ride*	dzi˅-eu		dz˥˩		*dzi^{2}
652.	*go up*	da^-eu	dá lế	da˧		*CdakH
653.	*go down*	za˄-eu	yà lệ	za˩˧		*ʒak^{L}
654.	*arrive*	keu^-eu	khờ			(*Nga^{1})
656.	*come out*	do^-eu	dùi	du˧		*?dwak^{H}
657.	*jump*	tsaw˅-eu		tsho˩˧		(*?bok^{H})
658.	*dance*	la˄je˅tsaw˄-eu	nhi-an			(*ga^{3})
659.	*fly*	zaw-eu		bjɔ˥ I,T		(*b-yam^{1})
660.	*flee*	paw˅-eu	khùy kê			*paw^{1}
661.	*carry*	ba˄-eu/daw˄-eu *perch*	ờ/ba(g)/bạ	do˩˧/ba˩˧		*bo^{2}
662.	*say*	eh˅-eu/ ja-eu daw˅ja	cha			(*uk^{H})
664.	*ask*	na˅ha˅-eu	ná hà	sa˥ *demand*		—
665.	*call*	ku˅-eu	khú			*ku^{1}
666.	*sing*	ca˅-eu	a tsí k'ú			(*mi^{1})
667.	*listen*	na˅ha˅-eu	ná hà *obey*			*?na^{1}
668.	*laugh*	ui˅-eu	ư-ơ			*ray^{1}
670.	*cry*	ngœ˅-eu	yơ thu	ŋy˥		*ŋo^{1}
671.	*count*	gui-eu	cư			*g-raw^{1}
674.	*bark*	tseh˄-eu	cộ	tse˩˧		(*(h)loŋ^{1})
676.	*answer*	ja meh˅-eu	é cộ lạ		676B	*tu^{1}
677.	*wash (person)*	dzui˄-eu	thu		678	*gyo^{2}
678.	*wash*	tsi˅-eu	tsì/kề chê	tshi˩˧	677	*tse^{2}
679.	*comb*	ka^-eu	pẹ	ka˧	cf.585	(* pi^{2})

	Gloss	Burma	Laos	China		*Loloish
680.	*sew*	gu$_{\wedge}$-eu/taw$_{\wedge}$-eu	gụ	gu̲↓	680A	*gyup^{L}
684.	*wear*	dm-eu	tông	dɔ̲┤		*Ndum^{3}
685.	*sit*	nui$^{\vee}$-eu	chố			*Cni^{1}/ʔmi^{1}
686.	*standing*	tu$^{\vee}$-eu	cồ yồ thú			*ʔto(ŋ)^{1}
687.	*stand up*	yaw$_{\wedge}$-eu	yồ	ꝏ̲↓		*ʔryap^{L}
688.	*free*	law-eu				*k-lwat^{H}
689.	*fear*	gu$^{\wedge}$-eu	gu(g) nhi	gu̲┤		*Cgrok^{H}
690.	*blow*	baw-eu	(po)			*smut^{H}
691.	*break*	pa$^{\wedge}$-eu/ tseh$^{\wedge}$-eu	timmư/pa			*ci t^{H}
692.	*fall*	co$_{\vee}$-eu/ga-eu	tchù		692A	*gla^{3}
693.	*lift*	ci$_{\vee}$-eu/ di$^{\vee}$-eu	bạ tĺ			*kyi^{2}
695.	*fold*	toe$^{\wedge}$-eu/ taw$^{\wedge}$-eu	bia tống	to̲┤		*tup^{H}
697.	*hit*	di$_{\vee}$-eu	tì	di↓	697B	*Ndi^{2}
698.	*be the case*	ngeu$^{\vee}$	(hu)	ŋɯ┐V		(*hut^{H})
699.	*join*	tsa$_{\wedge}$-eu		tsa̲↓		*ʔtsak^{L}
700.	*separate*	bi$^{\vee}$-eu/ka *interval*	bi ơ *divide* tik cay tik hung(n)	bi┐ kha↓	700A 700B	*bay^{1} *Cklay^{2}
701.	*catch*	mi$^{\vee}$-eu/ nyeh$_{\wedge}$-eu		ne̲↓		*smi^{1}
702.	*chase*	teh-eu	thê			(*Ngak^{L})
703.	*hang*	(ci$_{\vee}$)ceu$_{\vee}$-eu	pà tộ			(*Cgyit^{L})
704.	*shoot*	beu$^{\wedge}$-eu		bɤ̲┤		*Npök^{H}
705.	*stab*	tsaw$^{\wedge}$-eu	chô		705A	*ʔdzap^{H}
706.	*kill*	seh$_{\wedge}$-eu	sẹ	se̲↓		*Csat^{L}
707.	*pierce*	geu$_{\wedge}$-eu/caw$^{\wedge}$-eu/tsaw$^{\wedge}$-eu	bơ			*Nkyap^{H}
	insert	tso$^{\wedge}$-eu		tsu̲┤		
708.	*tie*	pa$_{\wedge}$taw$_{\wedge}$-eu		tshŋ┐		(*pay^{1})
709.	*untie*	pui$^{\vee}$-eu		phɯ┐/phe↓		*pre^{1}
712.	*weave*	sa$_{\vee}$nm$^{\vee}$za$_{\wedge}$-eu	(sà nú(n))gạ			*rak^{L}
713.	*weigh*	sa$^{\wedge}$-eu	yơp'iá			(*kyin^{1})
714.	*open*	pah-eu	p'ăng	phɔ̲┤		*pwaŋ^{3}
715.	*close*	pi$_{\vee}$(leh$_{\vee}$)-eu	p'ì		715B	*pi^{2}
720.	*send (person)*	bi V	là ý o			(*Cpo^{3})
	(thing)	daw$^{\wedge}$ah$^{\vee}$-eu	bì ơ			
721.	*teach*	meh$_{\vee}$-eu	é mè	me↓		*sma^{2}
722.	*study*	dzaw-eu		dzo┐T	722B	*Ndzaŋ^{1}
	herd (vt.)	lo$_{\wedge}$-eu		lu̲↓		
725.	*raise animals*	cu-eu	(gà) p'à *pigs*/ tchu *feed*			(*myu^{1})

	Gloss	Burma	Laos	China		*Loloish
726.	*play*	ni˅g'a-eu	ga(g) ơ		726B	*ʔga^{3}
	push	deh˅-eu		de˩		
728.	*pull*	g'eu˅-eu/ g'aw˅-eu	gơ	xɤ˥ I	728A	*Ngaŋ^{1}
729.	*spin*	gah-eu	pu p'a o *roll*			*g-waŋ^{1}
	move	ji^-eu	pé	dʑi˥		
731.	*throw*	bi˅-eu/ bui˅-eu	ố che			(*Nba^{1})
732.	*rot*	peu˅-eu				(*Nbup^{L})
733.	*rub/sweep*	si^-eu/ saw^-eu	kề chê	zu˩ IVT (so˥ *wipe* si˥ *scrape*)		*sut^{H}
734.	*sharpen*	si˅-eu		bo˥ *scrape/ shave*		*si^{2}
735.	*sleep*	yu^-eu	yụ-ợ/yìu mứng	ju˩		*yip^{L}
736.	*shake*	yaw dzu˅	kề		736B	*kyway^{2}
	press down	deh˅-eu		de˩		
739.	*stop*	g'a˅na˅na˅-eu		na˩		(*tso^{2})
740.	*swell up*	pu˅-eu		phu˩	740B	*Cpwam^{2}
742.	*twist*	yeu^-eu		jɤ˩		*hret
743.	*do*	m˅-eu	ứng	ŋi˥		*m^{1}
745.	*love*	(g'œ˅-eu) ga˅-eu	mộ mia			—
746.	*meet*	tah˅pu˅-eu	thàng p'u ơ			*Ctoŋ^{2}
749.	*finish*	ji˅-eu	zchi bià			*bran^{1}
750.	*far*	yaw mah˅	cà ma			(*we^{2})
751.	*near*	daw˅peh	tò p'e	ŋi˩		*Cni^{2}
752.	*many*	mya˅-eu	yơmià	mja˩		*Cmya^{2}
753.	*few*	ma˅mya˅	mà mià	nɔ˩		*nay^{2}
754.	*long*	yaw mah˅	yơma			*m-riŋ^{1}
755.	*short*	yaw aw/ yaw nym˅	yơnhứng			*sn-yum^{1}
756.	*big*	hui˅-eu	yơhừ(g) (ngou)	xɯ˩		*k-ri^{2}
757.	*small*	nyi˅-eu	yơnhí (iniung)			*n-yay^{1}
758.	*high*	yaw go˅	yơcố			(*ʔmroŋ^{3})
759.	*low*	yaw je˅	yơơ(g)			(*ʔn-yim^{3})
761.	*put/place*	ta˅-eu	thà		761A	*ʔta^{2}
763S.	*ill*	na˅-eu	na ơ	a˥ na˥		*Cna^{1}
763C.	*cure*	la^ta˅-eu	mừng lá			—
764B.	*ripe*	myah-eu	yơmiang	mjɔ˥		*smiŋ^{3}
766.	*feed*	bi dza˅-eu	tchu			(*s-dza^{2})
767S.	*wake up*	noe˅-eu	neủ lá			*Cno^{2}
	C. *waken*	la^noe˅-eu				(*S-Cno^{2})

	Gloss	Burma	Laos	China		*Loloish
768.	*bury*	du$_{v}$pah$_{v}$-eu	tsố ha tù			(*S-Ndu^{2})
771.	*hide* (vi)	za$_{^}$-eu	gô(g)gạ(g)			*wak^{L}
772S.	*burn*	do$_{^}$-eu/pui$^{\wedge}$-eu	tộ -nga	pɯ̲˥		*?duk^{L}
772C.	*set on fire*	keu$_{v}$ (do$_{^}$)-eu	ngô-yiề			*S-?duk^{L}
786.	*able to (well)*	V ci$_{^}$		tɕi̲˩		(*?put^{L})
787.	*able to (can)*	V nya		ɲa˥	787A	*Nga^{1}
790.	*very*	zaw^{v}V		dɔ̲˥	IVT	(*Ndza^{2})
796.	*now*	nym$_{v}$m^{v}	nhử ng(n)		461+796B	*?-may^{1}
797.	*formerly*	a^{v}hu	dù hŭ			—
801.	*not*	ma$_{v}$ V	mà(ma)	ma˩		*ma^{2}
802.	*don't*	ta$_{v}$ V		tha˩		*ta^{2}
806.	*a little*	ui cui$^{\wedge}$	mi chi			*?ə?cik^{L}
827.	*want to*	V maw$_{^}$	mộ	mo̲˥	827B	*map^{L}
828.	*excessively*	a^{v}dzeh$_{v}$		dze˩		*kay^{1}
833.	*still*	si$_{v}$		si˩		*se^{2}
	overflow	bya k'a^{v}-eu		bi˩		
	wrap around	lah^{v}-eu		lɯ̲˥		
	roll up	lui$^{\wedge}$-eu/yo$^{\wedge}$-eu		lɯ̲˥		
	weave-2	dzeu$_{^}$-eu		dzɿ̲˩		
	level	deh-eu		de˥		
	lose	dzeh-eu *miscarriage*		dze˥		
	complete	yaw ku$_{^}$		gu˩		
	follow	leh$_{v}$nah		le˩/ne˥		
	soak	dui$^{\wedge}$-eu		le̲˩ dɯ̲˥		
	wink	mi$^{\wedge}$-eu		mi̲˥		
	oppress/mass			zɿ̲˥		
	cry out (rats)	deh^{v}-eu		de ˥		
	leaf through	po$^{\wedge}$-eu *look through*		pu̲˥		
	wear bracelet	du$_{^}$-eu		do̲ ˩		
	raw (boat)	heu-eu	chlọ hơ	xɤ ˥		
	pick (teeth)	k'eu$_{^}$-eu/ kaw$^{\wedge}$-eu		xɤ̲ ˩		
	pluck (flower)	tseu$^{\wedge}$-eu	chợ	tsɤ̲˥		
	turn over	po$^{\wedge}$-eu		pu̲ ˥		
	scatter	seh$_{v}$-eu		se˩		
	poor	sha$_{v}$-eu	gà tsờ	sa ˩		
	spend money	zm$_{v}$-eu		zɔ˩		
	receive	tsa$_{^}$-eu/sa-eu		tsa̲˩		

Gloss	Burma	Laos	China	*Loloish
point	ceh		tɕhe˧ / bjo˥	
hear-2			nɔ˥	
familiar	a˩myah *every, all*		mjɔ˧	
reduce swelling	shu˄-eu		su˩	
gargle	law haw-eu *trial by ordeal*		lo˩	
serve	ku˩-eu		khu˩	
crisp	yaw ko˄		ɣo˩	
blow nose w. fingers	cu dzeh-eu		khɔ˧	
alive, raw	yaw dzm˩ *starving*		dzɔ˩	
collect	g'o˄-eu		ɣu˧	

PHUNOI OR CÔÔNG[1]

DAVID BRADLEY

ABSTRACT

A substantial vocabulary of this Loloish Tibeto-Burman language follows some phonetic, phonological, and comparative observations. Phunoi usually has final /p/, /t/, /m/, or /n/ in reflexes of Proto-Loloish roots reconstructed with *-p, *-t, *-m, or *-n respectively. Phunoi is also conservative in preserving the three-tone system reconstructed for Proto-Loloish non-stopped syllables; in stopped syllables, the two-way tonal distinction has its southern Loloish phonetic reflex. Phunoi, like other Bisoid languages, has undergone a chain shift in manners of initials: *voiced stops have voiceless unaspirated reflexes, while *stop-prefixed nasals have voiced *stop* reflexes.

PREVIOUS WORK

The first vocabulary of this language appears in Lefèvre-Pontalis 1892, under the name 'Khong'. An excellent vocabulary, with tones indicated, is in Roux 1924; there is also ethnographic and historical information in this source. Several linguists, including Shafer and Nishida, have used the Roux material in comparison. Nishida 1966-7 shows that Phunoi is closely related within Southern Loloish to Bisu, a language of northern Thailand, and to Pyen in Burma, reported in Scott/Hardiman 1900; Matisoff 1972 uses the term 'Bisoid' for this subgroup. Harris has more recently worked with several informants, including mine. Ferlus has also done work on the language, and some ethnographic information on the Côông in Vietnam is found in Vuong 1973.

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PHUNOI AND THEIR SETTING

The Phunoi live in Phongsaly Province, northeastern Laos; the Northwest Autonomous Region of Vietnam; and probably in China as well. In Vietnam, the Phunoi are called Côông, and speak a slightly different dialect; according to the 1960 census, there are about 6,500 in all. In Laos, the Phunoi live in a concentrated area around Phongsaly town; Roux reports a population of 10,000 in 1923, which is now probably far too low. There are, according to informants, five major clans, each with a dialect; Roux reports one, Ferlus another, and Harris and myself a third. Some Phunoi also now live in Luang Phrabang and Vientiane Provinces, as they were unable to return home after serving in the Royal Lao forces. 'Phunoi' means *little man* in various Dai languages including Ly, and is probably not the original name for this group; Côông [kho:ŋ] is more likely to be the original name. The relatively small areas inhabited by the Phunoi, and the large population concentrated in these areas, are both unusual among Loloish groups — which tend to be geographically scattered, and intermingled with other groups.

According to Phunoi tradition, they were under Burmese rule in the Muong Sing area of northwestern Laos until five generations before 1923. This location is much closer to the modern Bisu and Pyen, so genetic comparison supports the tradition. Then, after a Chinese invasion, they fled to their present area; perhaps this invasion can be associated with Yung Li, the last Ming emperor, and his Manchu pursuers; or with the later upheavals associated with the Mohammedan rebellion in Yunnan.[2] They were then involved, always on the losing side, in wars between the Burmese and the Vietnamese. The resettlement of populations after wars, in the territory of the victors, may account for the presence of Phunoi in Vietnam. The main concentration of Phunoi was in Muong U, a part of the Ly Federation [sip sɔ̌ŋ phân na:], *twelve thousand wet-rice fields*, when the French entered the area;[3] there are strong Ly cultural and lexical influences on the Phunoi in the area. For example, the Phunoi adopted Ly Buddhism.

The history of Muong U has been extremely turbulent in the last century. Various armies of Chinese bandits caused chaos for more than thirty years at the end of the nineteenth century. These Chinese, called [hɔ] in most Dai languages of the area, are called /hu̯o bà/ in Phunoi; several other Loloish languages have related forms, derived from *hek^{L}. These Chinese were eventually subdued by the Ly, who were in turn conquered by the French — who then received cession of the area from China, the nominal ruler, in 1895.[4] There were major Ly revolts in 1908-10 and 1914-6;[5] the French suspected the Phunoi of involvement

in at least the second of these.[6] Between 1917 and 1924, the French built many roads in the area to consolidate their rule — using mainly Phunoi corvée labour.[7] Most of the non-Phunoi population of the area went to China to avoid this work; thus, in 1921 the French moved their administrative centre to Phongsaly, in the Phunoi area of the province. There were constant bandit raids from China — one source lists ten between 1917 and 1930.[8] The Phunoi began to serve in the French armies, and later benefitted from high opium prices, and Vichy government support of opium cultivation, during World War II. Anti-Japanese, Viet Minh, Pathet Lao, and CIA guerillas were active in the area at various times; the Royal Lao government also used the Phunoi in its forces. During a brief truce in 1958-9, the Royal Lao government tried to exterminate the Pathet Lao and Neutralist forces in the area.[9] From 1959, Phongsaly Province became a Neutralist stronghold under Colonel Khammouane; he was supplied from China, and roads were built connecting northern Laos with adjacent areas of China. For about ten years, the area was subject to intensive US bombing. Now, at last, Laos has achieved peace; the Phunoi are certain to benefit.

TRANSCRIPTION: PHONETICS, PHONOLOGICAL INVENTORY

Items in brackets do not occur in the primary system, but only in the secondary system of loans. There are very many loans in Phunoi.

1. **Minor Syllables** (schwa vowel, pitch same as following syllable, with these initials)

	(t)	c	k	Xh are voiceless aspirated
		ch	kh	stops. /t/, /d/ are den-
b	d	ʒ	g	tal; /f/ is a bilabial or
f	s			labiodental fricative. /ʒ/
w	l	j		here is [dʒ].

2. **Initial Consonants** (followed by full, tonal vowel)

p	p$\hat{i}$	t	c	(k$\hat{u}$)	(k$\hat{i}$)	k	?	As above, but /ʒ/ is a palatalized dental, weakly affricated. /b/, /b$\hat{i}$/, /d/ are sometimes implosive. /m$\hat{i}$/ and /ɲ/ occur only in juncture in my data. /j/ is a palatal continuant; /hj/ and /hl/ are strongly articulated, voiceless-onset palatal and lateral continuants. /sh/ is an aspirated dental spirant. hN are voiceless nasals.
ph	ph$\hat{i}$	th	ch	(kh$\hat{u}$)		kh		
b	b$\hat{i}$	d	j			g		
m	m$\hat{i}$	n	ɲ					
hm	hm$\hat{i}$	hn	hɲ					
(f)		s	(ʃ)			(x)	h	
w	l	j				(ɣ)	ɦ	
	hl	hj						
		sh						

3. Vowels

i	ɨ	u	ĩ	(ɨ̃)	(ũ)	All but two native vowels are
e	ə	o	ẽ	(ə̃)	õ	non-diphthongal. The nonnative
(ɛ)	ɑ	(ɔ)		ɑ̃		diphthongs are listed later.

4. Final Consonants

p	t	(k)	[ʔ]	Occurring combinations of Vowel
m	n	ɲ	(ŋ)	and Final Consonants are stated
u̲		i̲		below. [ʔ] is a juncture phen-
				omenon in primary system.

5. Tones

ˊ ˋ ø (ˇ)

High (level or slightly falling), low (level or slightly falling), mid (level), and rising, phonetically. The rising tone does not occur in the primary system.

PHONOLOGY

The phonological oppositions are subsumed in the charts above. Minor Syllable Consonants have a two-way opposition, stop (S) or continuant (C); Initial Consonants have a three-way opposition, with nasal (N) in addition to S and C. Vowels are oral (O) or nasalized (N).

The S and C group consonants are contrastively voiced (V), strongly articulated (H), or weakly articulated (W), the last non-voiced and non-aspirated. The N group are either strongly articulated (H) or voiced, weakly articulated (V); the values of H and V are different with N than with S or C. Borrowings have added a number of additional CW elements, and introduced one which formerly occurred only in Minor Syllables to Initial Consonant position (f). The following chart refers to Initial Consonants; Minor Syllables have several fewer possibilities, thus the opposition is more restricted; this reduction can sometimes be shown to be recent (either by comparisons with Roux materials, or with other languages).

The positions of articulation which are contrastive in primary phonological system (native words) are labial (L), dental (D), palatal (P), velar (X), and laryngeal (Ḥ). Labials also occur palatalized (LY), and velars occur labialized in secondary system (XL).

		L	D	P	X	ƃ	LY	XL
S	W	p	t	c	k	ʔ	p̰	(k ṵ)
S	H	ph	th	ch	kh		ph̰	(kh ṵ)
S	V	b	d	ɟ	g		b̰	
C	W	(f)	s	(ʃ)		h		
C	H		sh	hj,hl			(palatal continuants are	
C	V	w		j,l		ɦ	lateral or nonlateral)	
N	H	hm	hn	hɲ			hm̰	
N	V	m	n	(ɲ)			(m̰)	
O	i	ɨ	u		N	ĩ		
	e	ə	o			ɛ̃		õ
		ɑ					ɑ̃	

The final consonants have the same basic three-way manner opposition as initial consonants, S, C, or N; but there is no additional V/H/W opposition. Also, the position opposition in native syllables is two- or three-way, L/D for S, L/P for C, and L/D/P for N.

There are voiced fricative realizations of /b/, /d/, /g/, /w/, and /j/; they occur mainly in close-juncture; although /w/ sometimes has a [v] realization initially. As in Vietnamese and most Dai languages, but in few other Loloish languages, the voiced stops /b/ and /d/ tend to be implosive. Also like Vietnamese, final /m/ tends to have a simultaneous velar closure: [ŋ͡m]. The Dai loanword element in Phunoi can hardly be overemphasized; several consonants, e.g. /f/ and /ʃ/, occur only in loanwords; the vowels /ɛ/ and /ɔ/ appear to be distinct from /e/ and /o/ only in loanwords — although there is allophonic variation between [e] and [ɛ] for native /e/, and [o] and [ɔ] for native /o/.

In native words, and in assimilated or fortuitously canonical loanwords, the following combinations of vowel, and final occur — some are much more frequent than others.

-ɑp,	-up,	-op,	-ɑt,	-ot,	-it,	-ət,	-et
-ɑm,	-um,	-m̰,	-ɑn,	-on,	-in,	-ən,	-iɲ
-ɑṵ			-ɑḭ				

In addition to the two diphthongs shown, various possibilities occur across morpheme boundaries, and a very large number of possibilities occur in borrowed words, along with nearly every possible combination of O-vowel + final stop and N-vowel + final /m/, /n/ or /ŋ/. Many diphthongs, including [-əḭ, -ɔḭ, -oḭ, -eṵ, -ɛṵ, -ɨɣ̰, -uḭ] all appear to be secondary. Examples of Vowel plus Final Consonant combinations that are secondary include [-ip, -ep, -em, -en] and several others of which there are fewer examples. There are several vowels which do not

occur nasalized in native words, but which do in loanwords. All of these changes involve utilizing sounds which occur in the language in combinations that did not previously, but which may well have at some previous stage in the language. A case in point are the velar finals. These must be reconstructed for *Loloish, and are in fact attested in Roux and in Bisu in the case of the velar nasal final; but sound change has eliminated them from Phunoi. The possibility of a velar final is then reintroduced by loanwords.

Several further juncture phenomena can also be tentatively stated on the basis of my data. Within a word (for this purpose defined as coextensive with the noun phrase or verb phrase, including particles if any) there are various kinds of assimilation which affect the nasal initials. Specifically, a nasalized vowel, or a vowel with following n, or the glide -ɑu̯, all are realized with [m] when followed by a labial; in the case of the vowel with following n, there is no longer an n, but only an m; cf. *mouth* below. Word finally, and particularly in utterance-final or citation form, there is a possible final glottal stop; when the Tone is low or mid in pitch, there may also or instead be a constriction and laryngealization of the vowel (not, however, corresponding to instances where comparative data would indicate a final *-k for Loloish). In closer juncture than word juncture, the H (voiceless, strongly articulated) nasals often become V (voiced), but the conditions are difficult to state.

Many minor syllables in primary system words show a reduced form of the first element in a compound: /lə̆-/ from /là/ *hand*, among others. In such cases, the rhyme correspondence of the reduced syllable is, of course, irregular. In cases of juncture or reduction differences, the form which actually occurs is given in the vocabulary.

DIALECT DIFFERENCES

At least six dialects of Phunoi exist: five in Laos and one in Vietnam. The transcription used by Lefèvre-Pontalis is not accurate enough to show dialect characteristics, and Vuong does not give enough forms, so much more data is needed on the Vietnam dialect. As noted, Roux records one Laos dialect, Ferlus another, and herein a third is presented. When they differ from my data, forms from Roux are included in the vocabulary, in parentheses ( ).

One striking difference is the presence of -ng, presumably representing final [ŋ], in Roux; while such forms simply have nasalized vowels in my data. Perhaps the loss of final [-ŋ] has occurred in the last fifty years. Another difference concerns reduced minor syllables where /n/ initial would be expected etymologically, such as *bean* or

nose. The Roux data shows an /n/, but my data shows a change to /lə̌/ – as there are no nasal-initial minor syllables. Another implied change parallels Lao: palatal affricates seem to have become aspirated dental spirants tchà là *tiger*, my data /shə̌là/. Further differences include a possible retention of initial /ŋ/ in the Roux dialect, unlike its rather heterogeneous reflexes in my data.

Further study of Phunoi dialects is needed.

COMPARISON WITH *LOLOISH

As noted in the abstract above, Phunoi is similar to Bisu in many respects; in fact it is Bisoid in the sense of Matisoff 1972. *Loloish reconstructions have been the subject of much work lately, especially by Matisoff. I have adopted the labels used by Matisoff for various reconstructed categories; in some cases Phunoi does not supply data to differentiate them all. Following Matisoff 1971, I use the labial to represent all positions of articulation in correspondence charts when discussing *Manner of articulation; and the voiceless unaspirate to represent all manners when discussing *Position of articulation.

Prefixes

Some of the Minor Syllables in Phunoi are from *Southern Loloish prefixes. One example is *moon* /fə̌lɑ/, Akha /bɑlɑ/, Lisu /hɑbɑ/, Lahu /hɑpɑ/, the latter two with the order reversed (forms from data obtained in Thailand). In many other Loloish languages, this word has a voiceless lateral initial reflecting this prefix. In *arrow* /bə̌lɑ/, Akha /mjɑ̲/ Akha has fused the prefix to the initial as a nasal; other southern Loloish languages reflect this prefix in initial and/or tonal differences. An example that shows how these prefixes may have arisen is *tear* (n) /bə̌lɑ́/, from a reduced form of *eye* /bi̲ɑ/ plus *water* /lɑ́/.

The *Lolo-Burmese prefixes *? causative, *k *animal*, and *ʃ *body part* have fused with the initial and been treated as a unit. With some *Resonant initials, there is a different development, resulting in a different correspondence, when the animal prefix is involved. The causative prefix, because of regular sound change, would not be observable with stop initials; with nasal initials, one might expect causative pairs of verbs one of which was a voiced stop and the other of which was a voiced or voiceless nasal. For further on these three prefixes elsewhere, see Bradley 1971 and 1975.

Initials A. Manner

*Plain (formerly *Aspirated, and usually realized as such) and *Stop-prefixed stops are realized as voiceless aspirated stops in Phunoi. *Voiced and *Nasal-prefixed stops have reflexes with voiceless unaspirated stops. *Stop-prefixed nasals have reflexes with voiced stops; *Plain nasals have reflexes with voiced nasals; and *S- or *?-prefixed nasals have reflexes with voiceless nasals. This could be seen as an example of a drag type of chain shift: a merger among voiceless stops (to a phonetically aspirated stop) leaving room for voiced stops to become voiceless (phonetically unaspirated) stops; leaving room for some nasals (in fact, the *Stop-prefixed nasals) to become voiced stops, while other nasals remain nasal.[10]

Initial Manner Chart

*Loloish	Phunoi	Bisu	examples (in Phunoi; sometimes the Bisu is not available)
Stops			
*Plain	ph	ph	*above, bitter, dog, day after tomorrow, fear, goat, grey, horn, leaf, person, deer, paddy, silver, six, foot, thorn, tie, vomit, wash (person), sweet, spit, smoke, steal,* (loans) *pepper, Shan*
*Stop-prefixed	ph	ph	*change, dove, drum, frog, grandmother, grind, hawk, male suffix, sour, teeth,* (possible causatives) *fear, steal*
*Voiced	p	p	*alive, bee, branch, bark, caladium, give, head,*[2] *have, poison, pile up, pound, drink, wing, vulva*
*Nasal-prefixed	p	p	*book/read, cowrie, dig, shoot*
Nasals			
*Plain	m	m	*horse, sky, you, old, cat, powder, heart*
	m	b	*father, husband, sit* (proto-variation: *Plain vs. *Stop-prefixed)
	b	m	*eye, face, grass, wind* (proto-variation: *Stop-prefixed vs. *Plain)
*Stop-prefixed	b	b	*fire, hungry, lightning, round, mother, elephant,*[2] *heart,*[2] *thumb, son-in-law, dream, girl, monkey, ill, morning, near, black, spirit, gun, brain*
*S- or *?-prefixed	hm	hm	*blow, cow, mushroom, knife, hair, red, listen, name, see, ripe, snot, earth, forget, potato, lungs, tail, bamboo shoot, ear*
Spirants			
*Plain, *Prefixed	s	s	*round thing, kill, louse, meat, pour, steam, (iron), tomorrow, die, blood, who, three, liver, rub/sharpen*
*Voiced	j	j	*child, he, go down*

Resonants			
*w	w	w	*hide, flower, palm, pig*
*S-wat	hl	-	*wear, clothes*
*C-w	?	?	*bear, elder sibling*
*r	j	g	*bone, chest, get pheasant, weave*
*S-r	hj		*count, sell, clf. people, ashamed*
*?-r	hi		*chicken, stand up*
*k-rɑ(t) *k-wɑ	h		*ant, bamboo, leech*
*p-,k-r	h	h	*big, in front, rat, termite*
*C-r	?		*ashes,[2] laugh, MeB*
*y	j	j	*field, horse, medicine, opium, sleep*
*S-y	hj		*antelope, itch, raise animal, tobacco*
*C-y	h		*bellows, drunk, rain*
*l	l	l	*come, enough, hand, neck, warm* etc.
*S-l	hl	hl	*tongue, pants, penis*
*?-l	l		*ashes,[1] boat*
	h		*bark, beg, wind*
*C-l	?		*grandchild*
Fused *prefix becomes initial: *free, husband, lick, lightning*			
Laryngeals			
*?	?	?	*below, crow, egg, go,[1] intestines, noun/verb prefix*
*h	h, ɦ		*be the case, belch, that, rice*

The chart above summarizes developments of *Loloish initials of all *Manners, including *Spirants and all *Positions of *Resonants, in Bisoid. In some cases, the Bisu form is not available; perhaps Nishida can supply these forms from his notes. Some scarce *Resonants, e.g. *?-w, have been omitted since Bisoid data is not available.

*Resonants have fairly regular developments reflected by their Phunoi reflexes. *r-type resonants and *Voiced spirants have merged with *y-type resonants with the same *prefixes in Phunoi (but not in Bisu). *S-w apparently (one example) merges with *S-l. *Resonant *Manners are reflected quite well by Phunoi phonetics: *Plain are realized as Phunoi voiced continuants; *S-prefixed, strongly articulated continuants; *C-prefixed, Phunoi glottal stop initial; *?-prefixed *r/*y type resonants are realized as Phunoi voiceless, weakly articulated continuants (voiceless spirants), but *?-l has initial /l/ among its Phunoi reflexes. A couple of the *k-prefixed *r and one *k-prefixed *w are not realized as /?/ in Phunoi, but /h/ or /ɦ/ depending on exact

environment. The *Laryngeal system is approximately as reconstructed elsewhere (Bradley 1971), but some *Nasals, particularly *prefixed velar nasals, and some *Resonants as just noted, also have become phonetic laryngeals in Phunoi. More on the *Spirants below.

Initials B. Position

The following chart is similar to several in Burling's and Matisoff's works.

*Loloish	P	PY	T	TS	C	KY	KR	K
Bisu	p	pj	t	ts	ts	kj	k	
Phunoi (unasp.)	p	p̲j̲	t	c				k
(asp.)	ph	ph̲j̲	th	sh	ch			kh

Examples for Phunoi follow.

*P (unasp.) *potato, chin, carry (shoulder), deaf, cheek, give, rot, roast, shoot, vulva*

(asp.) *frog, grandmother, open vomit, leaf, grey*

*PY (unasp.) *bee* (asp.) *silver*

*T (unasp.) *alive, dig, drink, hit, poison, think, wing above, knot, sharp, thick*

*TS, *C, *KY (unasp.) *food, have, sparrow, suck,[2] waist, hawk*

*TS (asp.) *deer, salt, person, cough*

*C *lift, thorn, paddy, Shan/Dai*

*KY (asp.) *sweet*

*KR (unasp.) *hear, cowrie*

(asp.) /ch/ *sour, garden*; /kh/ *foot, hair, dove*

*K *bark, branch, neck,[2] bitter, behind, dog, steal, smoke*

The *Positions of articulation are from Matisoff. It is interesting to note that Bisu has almost the same number of positions as the reconstructed *Loloish system, and that their phonetic realization in Bisu supports the reconstruction. Phunoi is less conservative. Developments of *voiced stop-initials, which become phonetically unaspirated in Phunoi differ somewhat from developments of *voiceless stop-initials, which become aspirated.

*P initials are realized as phonetic labials in Phunoi; *PY as palatalized labials. *T initials are dental, and *K initials are velar stops (*Velar nasals have different kinds of reflexes, mostly laryngeal).

When *voiceless, *TS initials have reflexes with /sh/, *C and *KY with /ch/, and *KR with /ch/ or /kh/ depending on the *rhyme. When *voiced, *TS, *C, *KY and *KR initials all have reflexes with /c/.

*Nasals develop as *stops in some positions: *Labial, *Palatalized Labial, and *Dental as noted above. *Palatal nasals, of which there are comparatively few, are seen in *green* and *finger*; in Phunoi, these words have /hj/ initial and an irregular rhyme development with a nasalized vowel – perhaps partly involving metathesis. *Velar nasals sometimes follow the patterns seen elsewhere, but more often do not.

I has a voiced velar stop initial in Phunoi; this is regular, parallel to *fire*.

Five has a glottal stop initial and vowel nasalization (metathesis again?).

Fish has initial /j/, which is a reconstructable **medial* in this root, and also has an unusual rhyme development and vowel nasalization.

Banana has a voiced laryngeal /ɦ/ initial, from *Loloish *S-ŋ, rather than [hŋ] which does not occur in Phunoi, but would parallel the other voiceless nasals.

*Spirants, listed in the **Initial Manner Chart** above, are voiceless dental continuants in cognates of *Plain and *Prefixed spirants; and voiced palatal continuants in cognates of *Voiced spirants. Thus, the two *Positions of articulation for *Spirants have merged in Phunoi; in fact, the *Voiced have merged with the (*r- and) *y-type *Resonants. In Bisu, there is still a distinction between dental and palatal spirants, which corresponds to the *Loloish distinction. Unlike the *Voiced Spirants, *?-prefixed *r-type and *y-type *Resonants are usually voiceless spirants in their Phunoi (and indeed all their southern Loloish) cognates.

*Tones

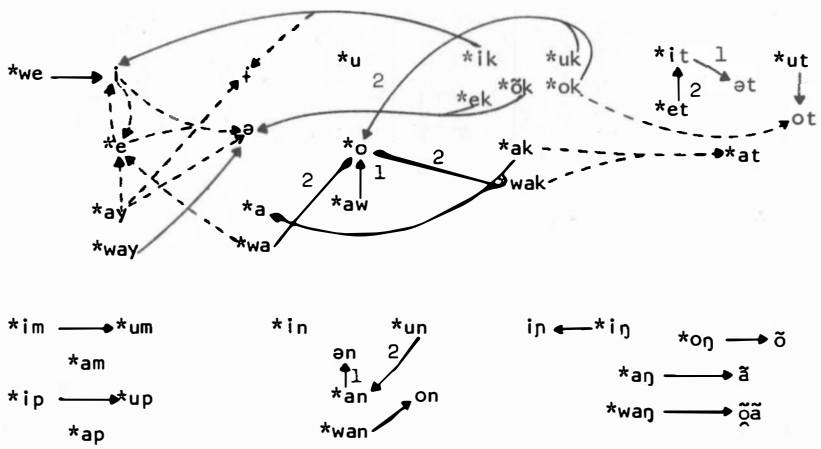
Phunoi tones (high, low and mid level pitches) correspond regularly with *Loloish *Tones I, II, and III respectively. *Loloish *High Stopped syllables have cognates in Phunoi with mid level pitch; *Low Stopped, low level pitch. In other words, Phunoi has merged *Tone III with *High Stopped, and *Tone II with *Low Stopped. Phunoi is thus similar to other southern Loloish languages in having a reflex of *Loloish *High Stopped which is phonetically higher in pitch than the reflex of *Loloish *Low Stopped. However, there is unfortunately no relation between presence of final glottal stop or of vowel laryngealization and the former presence of a final stop (*-k) which has been lost in Phunoi. In native words, syllables with final stops have only

two pitch possibilities, and syllables which one would wish to reconstruct (on the basis, for example, of orthographic Burmese forms, or forms in other Loloish languages) with final *-k also have only two pitch possibilities; but the *-k is not regularly reflected in Phunoi by a final construction or glottal stop.[11]

Rhymes

In Lolo-Burmese in general, the rhyme, or combination of vowel and possible final, can profitably be treated as a unit – as in fact is usually done in many Sino-Tibetan languages. Phunoi often supports previously postulated reconstructions of *Rhymes in *Loloish and Lolo-Burmese with reflexes that are phonetically very similar to what one might postulate for *Loloish. For this reason, the vocabulary following has been arranged according to rhymes.

One could make a chart similar to the following to represent schematically the possible developments from the *Rhyme system to the rhymes in any language. Arrows are used to show changes – a dotted arrow, a partial, conditioned change; a solid arrow, an unconditioned or 'otherwise' change. Where changes must be ordered, numbers are associated with the arrows that show those changes. When no arrows, or only dotted arrows, lead from a *Rhyme, then that *Rhyme is phonetically realized approximately as reconstructed. Thus, in Phunoi:



In summary: *Open-syllable rhymes remain open; *Nasal-final rhymes keep nasal finals, except for some *-ŋ finals, which show nasalized vowels but no nasal stop. *Stop-final rhymes with *-p or *-t retain the *stop, and some *-k have reflexes with /t/, but most *-k have been lost, leading to mergers with *open-syllable rhymes.

The developments of *front open-syllable rhymes are very heterogeneous; the conditioning factors are the *initial-consonant positions of articulation. The developments of *back open-syllable rhymes require ordered rules, as do the developments of *dental-final closed syllable rhymes. It can be noted that the developments of *labial-final *stop and *nasal are parallel, but *-t rhymes develop differently from *-n rhymes. However, the resulting systemic possibilities for final /t/ and /n/ are similar: both occur after /i/, /ə/, /a/ and /o/ in primary-system words.

There are some subregularities of *Rhyme development additional to those shown in the diagram above, which are listed in the following table.

*Loloish	Phunoi	Examples
*ʔl/ʔɲ+i	ɔ̃	*boat, wind, yB* (allophonic nasalization becomes contrastive after *-ŋ loss)
*ʔm$^{ye}_{ri}$	in	*name, tail, forget*
*i	ə	*MeB, know*
*i	i	*fat/oil, fire, fruit, daughter, grandmother, hit, lift, little, near, pound, sit*
*P,KY+e	ẽ,ĩ	*excrement, give* (allophonic nasalization becomes contrastive after *-ŋ loss)
*e	ə	*grey, MyZ, blood, die, liquor, what, leg, bite, snake*
*e	i	*earth, thatch, sun, day, cowrie, borrow*
*i,e	e	*go, penis, red*
*ai	ə,ɨ	*now, star, laugh, pull*
	ɑi̯	*sand*
*a	ɑ	(many examples) *eat, come, I,* etc.
*wa	e	*teeth*
	{o	*cattle, rain*
*u	u	*dig, egg, head,*[2] *intestine, rooster, silver, take, thick, thorn* etc.
*Po	u	*mushroom, price, (sky /o/)*
*ʔɲo	ɑ̃	*finger, green*
*o	ɑu̯	*bone, count, cough, dove, horn, smoke, sweet, steal, wash*
*aw	ɑu̯	*call*

*Loloish	Phunoi	Examples
*ip,up	L+op	*book, rot*
	up	*sleep*
*ap	ɑp	*duck, lightning, lungs, snot*
*it	ət	*goat, grind*
*et	et/it	*drunk, bamboo shoot*
*ut	ot	*blow, body hair*
*at	ɑt	*alive, clothes, b.deer, fear, flower, free, hungry, kill, leech, spirit, vomit*
*ik	i	*angry, joint, root, year*
	ə	*kick, new*
*ek/ök	ə	*cut, shoot*
*uk/ok	ot	*born, crooked, (fear /at/)*
	o	*back, bark, below, brain, enough, poison, waist*
*ak	ɑt	*ant, day after tomorrow, hide*
	ɑ	*above, ashamed, ashes,*[2] *banana, bird, black, chicken, crow, dream, eye, hand, leaf, morning, pig,* etc.
*wak	o	*grass, rat*
*im/um	um	*drum, house, pile up, warm*
	m	*caladium, three, thread*
*am	ɑm	*bear, cloud, fence/garden, hair (head), iron, sheep, eZ*
*in	in	*good, name, sour*
*un	on	*stomach/belly, breast*
*an	ən	*louse, paddy*
	ɑn	*field (wet)*
*wan	ɑn	*hawk, face, spittle*
*iŋ	iɲ	*fingernail, full, neck*
	in	*liver, tree*
*oŋ	õ	*wing*

*Loloish	Phunoi	Examples
*aŋ	õ	*horse, husband*
	ã	*cooked rice, deaf, drink, old, friend, he, light, nose, open, person, sell, water, you*

Vocabulary

The following vocabulary includes Roux, with no modification in transcription, within brackets (when the Roux form differs appreciably from the one I elicited). It also includes items from Harris' tapes, when those differed from the form (in this case mostly reflecting lexical differences) that I obtained. These are not bracketed, since the transcription is mine. Forms cited include all juncture and other morphophonemic processes.

-a

above	tha ə?	*bracelet*	hná tán	*divorce*	chó hna ɲí?
(*add*	ca lau)	*branch*	ʔấ gà?	(*go) down*	yà lé o
adult	sə̆ pùp bà	*brave*[2]	ʔấ ɦá yà	*dream*	jùp ba ba ce
Akha	khá kɔ̀ bà	*bread*	hma phắu	*dry* (vt)	wə̆chá jút
animal	sã kấ yà	*break*	pha o ví ce	*dust*	bŭkhla
ant	ɦat tsà	*black*	ʔấ da	*ear*	ʔấ hnà
antelope	hjà	*burp*	khon bá kắn ce	*easy*	ʔấ gá eà?
anvil	cam ba wa?	*button*	hna tŏm si	*eat*[2]	cà ce
arrow	bə̆la	*carry (back)*	sà ce	(*elder*	ja khoa)
ascend	phi̱à hnũ	*(shoulder)*	pà ce	*elephant*	jə̆ba
ashamed	ʔấ hjà/sà	(*bring*	ha làu)	*electricity*	fai̱ fà T
ashes[2]	khe̱lá	*change*	phá ce	*empty*	m̀ thi cà
ask	hná ɲí?	*cheek*	bo pà	(*enemy*	tồ sa cha lăn)
awake	ná nã	*chicken*	hi̱a	*enough*[2]	ʁája
baby	jə̆ka jà	*Chinese*	hu̱o bà	*evening*	mò da eve chi cìn
bachelor	jə̆khà	*child*	ʔấ jà	*eye*	ʔấ bi̱a
banana	ɦa sì	*cloudy*	jà ə̆ pè hnŏ	*face*	bə̆kà?
bank	ja tha	*comb*	tə̆cha	*fall*	tá ce
bat	pé fà	*come*	lá	(*farmer*	yá chư bà)
(*beard*	tù sa mŭt)	*cotton*	chăpát	*fast*	ʔấ tè wà jã
	(bàn hmut)	*coolie*	pà sà	*fat*	bŏpu̱án bi̱à jau̱
beautiful	ʔấ hma?	*clf. gen.*	má	*F y B*	wa
bell	lə̆khắ sì	*crab*	wə̆chà	*female*	ba
betel	hna hma é	*crawl*	lá to	*fern*	kút kà
bitter	ʔấ khà	*crow*	ʔua?	*few*	je ká jà
bird	hìa	*dark*	mɔ̀ blà?	(*field*	yá)
blind	ʔấ bi̱a pɔ̀	*deep*	ʔấ hnà	*find*	sa hmi̱á

-a (continued)

(*forest fire* châpăt/ bìlôngpià)
fireplace bì hmot jà
(*fix hair* yà)
float lấ thà fa̱i ce
fly fa/hu̱a
(*fly* mà̱ ba)
food ʔấ cá
forget hmin là ce
frog phà
(*foot* p'a vŏa)
(lăkhà)
garlic pha thiem sì
get ja ce
girl jà bì
go up phi̱à
good smelling cə sɨ̌ă ca
god T thé wa dà
government T la tha băn
granary[2] dăkha
(*grass*[2] ù tsí chà̱)
hang gà
happy ʔấ tà hmu
(*hardworking* tsắng k'ha)
hate[2] ʔấ lò nă
hear cà ce
heart lăba sì
(*heart* ni ma)
hen hi̱a ba
help ʔấ bi̱a sì ɲí?
hill săpup bi̱à
honey pi̱à chàu̱ lấ
hornbill băsà
I gá nŏm
(*immediately* chí a chà)
itch ʔấ hi̱à
join[1] kó na ɲí?
jump ga é me
hand là-
knife hmi̱à
(*lac* khà tù)
lake nun khàm ba
larynx khon bá sì
late fa nố?
leaf ʔấ phà
like gà hõ ə?
liquor dăkhà
little[2] sá
light (v) ʔa jầ jà?
live ʔấ ca
look for sa ce
love T ʔấ hà?
be loved lom bà?
man kăpi̱à
male phà
marrow ʔấ khat mi̱à
marry khĕba la ɲí?
mattress pha sá
meat sà
medicine T ja
(*merchant* cam cha bà)
monkey dà bà
(cf. Roux)
moon făla
(*moon* ùlà)
morning lăsə dà
mother ba
navel măchà?
never m chă
(*new* ya su)
no T bo ă
onion pha ku̱ó sì
opium ja jɨ̌en
ox ɲă
palm lăwo̱a
parrot ki̱à
(*pheasant* ya nhè p'ìu)
pig wo̱à
plant (v) kó nă ɲí?
pumpkin T mà pɔ sì
poor jà ʔe jầ
porch lăku̱o bă
pour lấ sè na nõ
priest[1] T phá?
put[2] ka na nỗ
rake (v) lă
refuse m khă
remain ʔấ ca
rhyme tà ɲí?
river lấ ba
road căbà
rooster hi̱a phu
run pi̱a hma hnỗ
(*rocky outcrop* yâ thà bă)
salt shà
satisfied ʔấ tã bò já
scale dá cấ
scorpion wăcha dot
scratch cha ce
send sá nỗ?
separate ʔò? hnà bi̱ò
sharpen sì jò tha ce
shelf tha thà
shoulder bag fà
short (person) ʔấ bé bi̱à
(thing) ʔấ hní mi̱à
sick dá ce
six khà
sky mò thà
skirt[1] din kà
slash bi̱a ce (cf. *knife*)
slave hmi̱a cé la ma
small ʔấ ɲia
smell (good) cə sɨ̌ă ca
(bad) nấ mè)
soft ʔấ pɨ̌n jà
sole pò woa lăkhà
spider pố bà
(*spider* cà cà bô ám)
pants hlu̱á hmố

a- (continued)

spit phìt da ɲí?
split thá
(*split* p'a)
spring lấ jà
spinach siɲ phà
steam sà ɲí?
step T thi ja?
straw là chi
sunrise mò ni sì khən là ce
sunset mò ni sì ta wea
swallow (v) hna ce
sweat mò hút na
tea lá
thin ?ã hlắ jà
this one hnã
(*threaten* kha khat chù u)
thumb lăba
tiger shà là
tobacco hja kòn
tongue ?ã hlá
tone sa mèn
town khon bá
trap hna tán
truck T lớt tó bà
understand ca kət (2nd T)
(" chạ yip là)
vegetable kàu̱(m)ba phá
wait gà hnã ce
(*walk* quà àu)
(*waterfall* yầ thà lắng)
wife khăba
wind há ban (măn)
what ?a că
(*white* a pa)
woman kh˘bi̱à
(*(fire)wood* bì xa thum)
son-in-law jăbà

-i

(*angry* tsì)
beat tì
black magic cí ə sə́ ce
blister cí jo bè ce
bury hni ton a tè ce
buttocks hɲi tã
cat mí
(*charcoal* bì chi)
chin, heel pi tùn
color T sĭ
cowrie cí lã kàp
curry T kălí
daughter jăbì
day hi ni
dye hnì ɲí?
earth hmí tã
eat[2] cì ce
elbow lăshi ton
empty m thi cà
fat (n) ?ấ shí
fight tì hnã ce
fire bì
(*formerly* nì chàng)
four (cit) sì
(*foyer* bì giàp)
(*gibbon* nà lì)
go down jà li ce
(*granary*[2] cô chí)
(*grass*[2] ù tsí chả)
grandmother phí
(*heart* ni ba)(lăba)
(*here* nhú chì chê)
(*indigo* mì)
(*jewelry* chi nhu sì)
jungle lo dú di wé
(*immediately* chí a chà)
(*little* ghi è)
lift chì jò mã wi̱ò
near ?ấ dì a
needle ci ke căp
(*owe* atsì achồ)
(*palm leaf* dìn nì)
(*pardon* tsí là nhề)
peppers lăphí sì
pigeon dò ko kì ke
pound tì
(*prevent* m kha bì)
put[1] ci ce
rain mò hó lì ve
ride ta i ?é o
root ?ấ hlì
round thing sì
sand T khi săi
(*scrawny* hiông è)
set (sun) ɲi u
sharpen sì jò tha ce
sit ni ɲí?
short (length) ?ấ hní mi̱à
(*skirt* tèng pì)
(*sparrow* chi chờ)(tăcá)
(*square* sí chè)
(*straw* là chi)
stretch au̱ hmá pi ce
sun mò ni sì
there hjok nì
today hɲa mé ni
vulture cán bàn hní kón
wide ?ấ tí
win ká ci ce
(win mì chăp)
year hi pi
yesterday hù ni
verb part. ɲí?
verb part. lì

-e

adverb particle è
always thề lế̌n
appear hɲá tè
armpit kà ki lé
arrow[2] she na sì
ashes[1] khělá
bat pé fà
behind lăkhuà hnò è
bite the ce
boar wěthã̄
buy hne ce
choose shé ce
close phè ɲí
cloudy jà é pè hnò
copper T tã̄ hné
cord[2] hnin hnè
(*crest* cừng the)
cross (v) tù lé ce
(*cut*[2] te)
dish T kho phé
(*dryness* mù nì tề)
fast ʔā̋ tè wà jã̄
few[2] je ká jà
fish jã̄ te
forehead bătā̋ se
go ʔé ~ lé
god T thé wa dà
hawk can té è
iron T hleʔ
jump ga é me
(*jungle fowl* k'hia nhề)
language cè
lazy bè ce
lick bè ce
light (fire) bì hlón we à
low ʔā̋ bé bi̱à
many[2] be hnú
(*measure* tề ù)
middle gù hnié
(*monkey*[2] a miề̀u)
MyB che
needle ci ke càp
nine tè
penis hlè
(*pheasant* ya nhê p'ìu)
pigeon dò ko kì ke
pine tree té jun cín
red ʔā̋ hné
roast ʔā̋ shè
(*square* sí chè)
swim T lā̋ luè ɲí
(*talkative* chê ê lamề)
teeth she phé
(*ten* tsê)
thunder mò ce cé ce
today hɲa mé ni
top (mountain) khàn thé
(*try* chư nê cơ bê)
verb particle ce
(verb particle yề)
(verb particle bê)

-i

armpit kà ki lé
(*attach* p'ừu)
(*big* hử̉ ề)
(*bring* su à nŭ)
chaff kà ti
(*cure* bừ)
dry ʔā̋ kī
(*farmer* yá chư bà)
few[2] sì
(*give* p'ử̉u)
good smelling[2] ca sĭa ca
laugh ʔi ɲíʔ
(*look at* cừu)
new moon kham nī
otter[1] ʔi bò
powder mí
(*remember* chừ khư dề)
(*run* hừ (n) nu)
(*sister-in-law* tsừ)
(*shake* khừ dù)
smile ʔi ɲíʔ
star băkí sì
(*thank* tàu bử̉u bla)
(*try* chư nê cơ bê)
turtle tã̄ khì

-ə

above tha əʔ
armpit kà ki lé
bark[2] (v) non cə ce le
basket khón ká wə kán ce
go back khà hnã̄
beam (hor.) khə
behind ləkhu̱à hno e
big ʔã̄ bà
bile bŏkà
blood sà
calf (leg) băthá
chaff kà ti
(*cut* tə)
dance jən ce
die sá ce
dog khà
easy ʔã̄ bà (cf. *big*)
FeB, FeS ʔá
FyS má
fence mù kə lò
(*finish* pơ (n))
fog chàʔ
foot lăkhà
good smelling cə sĭa ca
gray ʔā̋ phə
grow bà ce *(big)*
gums bàn khă̌
hiccup həʔ ce

-ə (continued)

hoe T kə có?
(*how long* ɑsò nhám mò)
how much T thế də
hornbill bă sà
in front gănùeị̂ (hù sừ)
inside thấ ə?
kick bătha?
knee bătu
leak ?ə ce
locative -ə?
look at kə ce
man kăpị̂à
mat tăpu
mattress pha sá
meat[2] tlə kàn
moon hàị̂ ce
FeB, FeZ ?á
FyZ má
mountain sə pup bà
mule mò lə lớ
night khə thầ
now hnã mè?
noodle há
pleasant ?ã căn hmə
plow lấ tầ sə ce
pour sà ce
question sə tã hnấ sà?
(*rain* mồ hỏ)
roll hɬé bò nàn cə è?
roof jə mú
(*separate* tsờ (n) làu)
shoot pə ɲí?
soybeans wán tế rə
sparrow tə cé jà?
straight ?ã dá
sweet potato chə kù hmấ
ten ɣiá
thing ?ɑ kàŋ khà cə {sá, sà
tie phà ce
tomorrow lăsə
day after tomorrow phat sə
top (toy)[2] T hmə khaŋ
use sá
vulva pà tò
(*when* ɑsờ nhám mề)
where sá dế? (ɑ sờ)
who sá
yes ?ə
thunder mò ce kà cín

-u

(*abandon* tsiu)
arm lăpù
blunt[1] ?ấ pú
blunt[2] bu cha
e [B] hu jà
y [B] hnu jà
(*boil* tsú lă yề)
catch hlap bò su bò
chair tã kú
cheap ?ấ thù jà
chopsticks khɣù dan thấn sà
(*close* p'ɨ̂u)
cross tù le ce
daughter-in-law jù
dig tù ce
dust bŭkhlɑ
egg hə ?u?
every sù — sù —
father mú
fence mù kəlò
hu?
mú bà
grandchild jă ?ú
(*grass* ù tsí chả)
happy ?ấ tà hmu
harvest rice ko cŭ ce
head ?ấ tu (ɑtu)
(*heart* mì tchù sì)(lăbɑ)
(*here* nhú chi chê)
intestines ?ấ?ú
(*jewelry* chi nhu sì)
jungle lo dú di we
knee bătu
(*lac* khà tù)
ladle lấ khu sà
mat tăpu
many[2] be hnú?
make waves lấ cù ce
middle gù hnie?
(*milk* nù(n)làng)
(*molasses* pồ tchàu p'u)
(*moon* ù là)
(*mosquito* hằng pỉn bồ cu)
mushroom hmú
(*new* yɑ su)
outside hnuə
(*panther* tchà là pám pông thù)
pillow tăkù
pair thặkhú
Phunoi phu nóị̂
(*pot* ù lồng)
sweet potato chə kù hmấ
price ?ấ hù?
raise hị̂ú
roof ʇămú
rooster hị̂ɑ pu
sad m̀ tà hmu
set (sun) ɲi u
(*shake* khù dù)
short (person) shấ thi phu jà?
shelf[2] tù?
silk ciŋ kú
silver phị̂ú

-u (continued)

silver coin phi̱ú sì
skin ʔā́ hlùʔ
skull ʔā́ tu jàu̱
(*sister* a tsu)
(*stool* tồng khu)
(*student* khu nhùm)
(*straight* a chu)
son's wife jù
suck lā́ cù ɲíʔ
take[2] bu ce
tall ʔā́ mú e jà
tendon lăkua̱
termite wù kàt
testicles hlăʔu/shèʔu
thick ʔā́ thú
thorn ʔā́ chù
twist T bít dŭ
valley mù phəp bi̱à
vein ʔā́ kù sà
(*whistle* tu tsúi)
yesterday hù ni

-o

(*adulterу* cồ lăng p'iêp lăng)
Akha khá kò bà
ashes[3] kò
(*aunt* ak'ô)
axe T khua̱m bɔʔ
(*back* nô khô)
bark (n) ʔá kò
bark (v) hmó ce
behind khuà̱ hnò
belly po pon
below ʔā́ ʔò
blind ʔā́ bi̱a pò
(*blind* bé chồ)
blister cí jo bè ce
brain ʔā́ dò
w. buffalo jò
build sò ɲí
butterfly ham pin tălo
buy bo ce
cabbage kan bò
catch hlap bò su bò
cattle jò hmi̱ā
chain shai̱ sho
change of state ò
cheek bo pà
chew kò ce
Chinese hua̱ bà
cloud mò thàm
cold ʔā́ chò
(*come out* do)
cook ko ce
crawl lá to
cucumber T săkhuá̱ sì
rhino shat nŏ
rice plant ko
right ʔā́ dí̱n hno jà
roll hí̱ɛ̱ bò nàn cə è
satisfied ʔā́ tā bò já
sent sa no
separate ʔò hnà bi̱ò
(*b. deer* hồ pồng)
difficult hɲak bò
dish kho phé
divorce chó hna ɲí
door lăk(u̱)o
earring hnò
enough lò
feed hnó ɲí
finished bə́ hnò ja
forearm lăkho
forehead bo kón
fork khò tam
free phó khàt ɲí
go out ko nò
(*granary* cô chí)
grass bò
hail lo kó sì
harvest ko cŭ ce
hate[1] ʔā́ lò nă
hate[2] lò e ja
high ʔā́ muó e jau̱
hot[2] hmo e
(*how much* a tso do)
join[1] ko khat ɲí
join[2] ko nă ɲí
jungle lo dú di we
kapok tree ba lo cín
kidney kho sì
(*kneel* p'at thô khau)
(*less* ô)
life T ʔā́ joʔ
lift chì jò mā bi̱ò
sole (foot) pŏwa lăkhà
spread out kò ɲí
squirrel ho to
stomach po pon
stone lăphò
sweat mò hut na
(*take* cô)
(*light* bì thồ)
lightning mò bi̱àp
lips ban kho
little sɔ ~ sa
lose tò ce
married woman khŏ bi̱à
medicine ja mo à
mosquito bò khú
mule C mò lə lɔ́
no T bɔ ă
noisy so ce
onion T pha kuá̱ sì
(*open* p'ô ù)
otter[1] ʔí bò
otter[2] T có nám
(*owe* a tsì a chô)
pen so dám
g. pepper T fărā́ săkuá̱ sì

-o (continued)

clf. person hjo
pickle ʔǻ chén hɲò
pigeon dò ko kì ké
pipe kó? sì
plant (v) kó nǎ ɲí
poison ʔǻ tò
porch lǎko bǎ
priest[2] to pí
pumpkin T ma pɔ sì
put in ɦo̱ no
put up tho ce
rain mò hó lì ce
rat ho tǎm
read bò bo ɲí
rib ʔǻ cò jàu̱
upper side[1] hmiǎ ʔĩ tho ʔĩ tho sə
(*unhappy* tôê p'a nê)
verb particle hnò
verb particle bi̱ò
vulva pǎtò
wag (v) kò e ce
waist ʔǻ cò
shadow ʔǻ ho
sharpen sì jò tha ce
shiver cho jə sàn ce
shoulder bǒɦǔm
sky mò thà
sloping ʔǻ phi̱an bo
(*there* yô)
throat[2] ʔǻ kò
thunder[2] mò ce cé ce
truck T lɔ̀t to bà
(*turn over* khô)
upper back lǎkho
(*weak* pôn)
weed (v) bò bo ɲí
wheat bò sì
white ant ho bìn
why m̀ tə ki̱o
window lǎkɥo jà

-au̱

abacus hjáu̱ sə̀
answer tau̱ bo
beg jón hàu̱
bone ʔǻ jàu̱
(*break* tau)
call hàu̱ ce
coconut T mà pháu̱ sì
coffin dau̱ khàm
cord hnẽ jáu̱?
cough shàu̱ ce
count hjáu̱ ce
(*cover* k'hiàu)
delicious ʔǻ cháu̱
(*dirty* tsào k'hùng...)
dove khón khàu̱
(*dress* (v) chau)
(*happy* tào bù è)
horn ʔǻ cháu̱
(*lift* thău)
(*nine* câu)(tè)
(*please* tàu bù è)
(*question* nào)
rib ʔǻ cò jàu̱
(*rice* T khàu tsẻ)
shout háu̱ ce
(cf. *call*
smoke bǎkhàu̱
steal khàu̱ ce
stretch au̱ hmá pi ce
sugarcane pòn cháu̱
(cf. *sweet*)
sweet ʔǻ cháu̱
thank tàu bủ u
they T kháu̱ che hã̄
think tàu̱ ce
twenty T sáu̱
vegetable kàu̱(m) ba
walk quà àu
wash lǻ́ thàu̱ ce
widow bəchàu̱
work mi̱àu̱ wan (2nd T)
Yao jau̱ jín bà
house post júm ʔín sǎu̱

-ai̱

ascend tai̱ é o
(*bad* a hay)
belt sái̱ hi̱ǻ́
be born səi̱ tài̱?
chain shái̱ sho
cord (elec) sái̱ fâ ɲí? T
change (loc) giáy ồ
electricity fai̱ fà T
(*king* a(ŋ)day a sinh)
(*plow* (v) thày)
(*mark* (v) mai)
rabbit kǎtái̱ T
sand khi sǎi̱ T
(*silk* may)
(*handsome* mà ai)
(*spend* chai)
step on nài̱ wàn ce
striped ʔǻ plài̱
(*suffer* dai)
(*thin* a pài â)
Thai thái̱ bà
upperside thai̱ bĕka sɛt

-əi̱ (secondary)

be born səi̱ tài̱
saw ləi̱
clear lɔǎi̱
moan hèi̱ ce

-ɔi̱, -oi̱ (secondary)

but ʔǻ kɔi̱
hundred hòi̱
(*sink* pòi)

-eo̲, -ɛo̲ (secondary)

(*agile*	tèu ŭ ê)
(*choose*	tsèu)
cup	kằkéo̲
(*destroy*	p'iêù)
fat	ʔấ teo̲
flame	pɛo̲ bì
go down	jà léo̲
(*immediately*	ắt têu êu)
(*pants* T	têo)
rattan	ʔấ téo̲
wither T	hèo̲ ce

-ui, -ei, -uo̲ (secondary)

able T	khat juo̲ pen
(*faded*	pèì)
(*fat*	lui è)

-ap

arrive	lap la
basket (fish)	khòn kap
catch	hlấp bò su bò
cowrie	cí lon kàp
duck	kap
fold	phàp
(*foyer*	bì giàp)
goose	kap líŋ cèn
hammer	bă̆chap
hat/turban	lă̆pap
(*healthy*	chàp bù ní bù è)
lid	ʔấ kap
lightning	mò bi̲àp
lungs	ʔấ hmap
(*pierce*	tsấp ù)
shoes	bă̆khàp
snot	hnàp
(*stab*	tsấp p'íot)
(*stand up*	hiap)
tongs	chap (cf. *hammer*)
NTai	mə(m) bàp
(*win*	mì chă̆p bla)

-up (-op)

adult	səpùp bà
(*answer*	tốp)
bedroom	jùp phi̲á
book	pop
dream	jùp ba ba ce
(*cook*	tsùp)
fist	lă̆sùp
(*greet*	dôp ù)
hold	sùp ce
(*mountain*	tu p'up)
sleep	jùp ce
(*prepare*	úp)
rot	pòp
(*stop*	tsup)
wet	ʔấ cup
yawn	jùp sà kấ ce
(*thighs*	li p'up)

-ip (secondary)

(*adultery*	cồ lằng p'iêp lắng)
box	ʔấ híp (area)
(*understand*	cha̲ yìp là)

-ep, -əp (secondary)

clever	ʔấ tep
(*house (on ground)*	tếng bệp)
valley	mù phəp bi̲a

-at

alive	ʔấ tàt
ant	ɦat sà
(*approach*	ya̲t lă̆u)
baht T	bat
beans	lă̆pat
(*beans*	na pàt)
breast pendant	lă̆pat
clear fields	bò cat ce
clothing	hlat số
cotton	chă̆pat
(*cultivate*	k'hat bù)
day after tomorrow	phat sə
b. deer	shat
dry	pat (cf. *bean*)
fear	khàt ce
(*fight*	pat lăng)
(*fire*	châ păt)
flower	hĭ wat
free	phó khàt ɲí?
gun	ʃin dat
hide	wàt ce
hungry	ɦằ bàt
(*jump*[2]	ya̲t àn-nù)
kill	sàt ce
(*kneel*	p'at thô khau)
leech	ɦat
market T	tă̆lat
marrow	ʔấ khat mi̲à
(*mix*	piat lăng)
narrow	khat
(*paper* T	kalat)
peanut	pat thòm
rhino	shat nŏ
shirt	hlat
shrimp	lon thàt
spirit	dàt
sweep T	ku̲àt
temple T	wat
thirsty	lấ bàt de
undress	hlap hlat ce
vomit	phàt ce
wash (clothes)	hlap cat ɲí?
waterfall	lấ that
(*wipe*	pát ŭ)

-ut (~-ot)

beard bàn hmot
bellows pi̱áŋ hùt
bend khot ce
blow hmot ce
body hair ʔấ hmot
born tot ɲíʔ
(*divide* put lăng)
fern T kát kà
set on fire hmot ce
fireplace bì hmot jà
mosquito net ʃut
(*soft* a pòt)
smoke (v) wăchá jut
stump ʔấ hlùt
sweat mò hút na
(*suffocate* mŭt)
throw ʔut ce
pluck chùt ɲíʔ
(*hot* mồ hut đề)

-ɔət

crazy ʔấ pɔət
liquid mud T (ʔấ) (ʔí) pòət
spill lấ kɔət ce

-ɔt (secondary)

car T lòt
train T lòt fai̱
yeast bòt

-it

bamboo shoots ɦà hmit
spit phìt dà ɲíʔ
twist bít dŭ

-et

chest of drawers băchét Eng.
drunk het ce
(*rhino* hết)(shat nŏ)
(*eight* T pét)
(*seven* T chết)

-ət

(*at night* khựt thàng)
(*dirty* chứt)
be born kàt
ewe chàt jà
goat chàt
grind khət
rake (n) ʔấ chàt
(*repair* lớt leu)
sheep chàt ʔam
termite wù kàt
(*toad* a pứt)
understand ʔấ ca kət

-ak, -ok, ək (secondary)

(*change clothes* tsòng p'ắc)
difficult T hɲak bò
leave T càk pài̱
coffin ʔiŋ kălók wòn ce
loam (n) T ʔấ hok
(*say* T bóc)
there hjok nì
cabbage (bok choy) phàk lám

-am

anvil cam ba waʔ
axe T khu̱am bɔʔ
bad smelling ʔấ hnàm
bok choy kam bò
butterfly ham pin tălo
cabbage phàk lám
carry (hand) hɲam ce
chaff[2] ham
cloth hnám
cloud mò thàm
coffin dau̱ khàm
cross T khám lé o
eight Vse. tám
(*feel* nàm mŭ)
fence chám
few m̀ lam
floor júmsì
fork khò tam
garden cham (cf. *fence*)
gold khàm
hair sham khẩ
iron sám
(*keep* cu u chi lâm è)
lake nún khàm bà
Lao wăchàm
left side là kam
little sám
(*merchant* cam cha bà)
mouth bam fòn
much ʔấ làm
middle nám kon kon hniá
new moon kham nɨ́
(*otter* làng sam)
(*panther* tchà là pám pông thù)
pen so dám
rat ho tăm
remember càm ce
Shan băchàm
sheep chàt ʔam
eS hnám ba
stairs chám
sugar T nàm tàn
(*swamp* p'ùm p'rằm)
three (cit) săm T
tripod shàm ku̱in sì
wall chám pi̱á
(*when* asò nhằm mè)
(*year* ni, ne)(hi pi)

-um

ashes[1] gǎthúm
(*awaken* júp nùm blǎ)
w. basket gǎdúm
borrow T jum ce
bury thum ce
beat (drum) thùm tì ce
drum thùm sì
(*fiancé* lúm p'a)
(*fiancée* lúm ba)
(*flood* lăng thum)
house júm (~ yám)
(*idiot* tsum è)
(*low, short* nhúm)
pus ʔấ ʔúm
pick fruit chum ce
pile up pùm ɲí?
shoulder bŏɦŭm
(*student* khu nhùm)
(*swamp* p'ùm p'răm)
urinate ʔɨ́ chum ce
(*unripe* a chùm)
house post júm ʔín sa̰u̯
warm ʔấ lúm
(*wood* bì xa thum)

-ɔm

bow head gɔm ce

-om

breath lóm
burn[2] hnóm bì a
button T hna tŏm sì
conversation lom hnấ ɲí?
corn hnám pi̯òm
(*good smelling* a hóm)
I gánŏm
be loved lom bà
meet T phòm hmi̯ã ce
peanut pat thòm
(*rice field* lang bồm m)
say lom ce
sew T hom ɲí?
swing chóm plen hlĕn ce
tired ʔấ hlóm
untie thòm ce

-m, -em

caladium pḿ sì
elder[1] ɲm mà
(*dumb* a thềm pên)
roof[2] ɲḿ mấ
tick nm sì
garlic pha thiem sì
NTai màm bàp
three sm̀ (~ shàm)
thread da̰i̯ khem

-an

ashamed ʔấ hjà căn
(go) back khà nan
basket khon ká wə kán ce
(soy) beans wán tá
beard bàn hmot
board[1] T ka dàn
bracelet hná tán
burp khon bá kăn ce
(*burn* bì chăn)
(*carry away* hăn na nŭ)
cave T ʔán thón
(*chase* căn nù)
embrace ʔàn ce
(*enemy* tô̰ sa cha lăn yề)
far[2] ʔấ kán
field lătàn
flea tã ɦăn
government la tha băn
grandchild[1] ʔấ ʔan
gums bàn khă
hawk can té à
heavy ʔấ hàn
hole[2] T phan tù
(*hemp* khiàng khằn)
(*jump* ya̰tàn-nù)(ʔut)
late ʔã fàn
leggings lapán
lips bàn khò
mix peán hnan ce
more can lầu
near[2] ʔấ kàn (cf. *far*[2])
old (thing) ʔấ ʔán
play tàn ce
pleasant ʔấ căn hmà
proud ʔấ hjă̰ căn
put can nù
read ʔàn ce
roll hɨ́ɛ bò nàn cə è?
saddle T mò ʔàn
sharp[2] ʔấ ɲán
shiver cho jăsàn ce
sloping ʔấ phi̯an
slow(ly) fàn fàn
spittle khan
soldier tha han
step on nà̰i̯ wàn ce
storm hăn fŭn
study hèn han ce
sugar nàm tàn
swell jàn ce
thousand phàn
toad khan khã
(*tobacco* ya khoằn)
trap hna tán
use ká nan ce
vulture cán bàn hnɨ́ kón
(*wait* tăng gi bằn)
work T mi̯à̰u̯ wăn
yellow ʔấ ʔán

-in

bed tín cán
chain[2] jin jò hné
cord[2] hnin hné
evening mò da é ve chi cìn
forget hmin là ce
glutinous rice ńà hmin
good ʔấ hmin
hope hmin cà me a
house post júm ʔín sặ̀u
(*lamp* p'ăng mặ̀n)
lean (v) hnin ce
liver ʔấ sìn
name ʔấ hmín
(*palm leaf* dìn nì)
socks T thon tǐn
sour ʔấ chín
spin pin ɲí?
tail tã hmin
(*termite* hù bìn)(wùkat)
thunder[1] mò ce kà cín
tree cín
tripod sham kụ́n sì
white ant hò bìn
wood (tree) cín
Yao jau jín bà

-en (secondary)

be T pén
blanket phèn
(*dumb* a thềm pên)
find[2] sa jèn hmi̯á o ja
flute T chèn
hang up chèn ce
(*hang up* pền)
(*opium* yàng yên)
see T hèn ce
study T hèn han ce
swing chóm plen hlěn ce
(*wet* lang chền yề)

-ɛn, -ɛan (secondary)

board[2]T pɛn
same T lɛ̌n
seed[2] T ʔấ kɛn
hard T ʔấ kɛn
mix pɛán hnan ce

-ən

bed tín cán
dance jən ce
(*finish* pơn bla)
hundred thousand mén T
louse sán
(*plate* hà(n)p'ưn)
poisoned ton sàn
paddy gǎchán
sunrise mòni sì khən là ce
(*tender* a pòn)
top (mtn) khàn thé
(*ugly* bưn ne)

-ɨn, -ien, -ɨen (secondary)

(*climb* khǜm)
(*return* khứm)
mirror T wi̯èn
right T ʔấ dɨn hno jà
soft ʔấ pɨ́n jà
opium ja jɨ́ɛn
top (toy)[1] fǎlɨn
(*ugly* bưn ne)

-un

chalk pun
chin, heel pi tùn
lake nún khàm ba
pine tree té? jun cín
masturbate nè phun phun ce
sprinkle lấ sùn ce
stir[2] kǔn ce
(*storm* T hăn fŭn)

-on

bark[2] (v) nón căce le ɲí?
basket khon ká wə kán ce
beg jón hà̤u ce
belly po pon
boil ton ce
bloom phòn ce
blow hon ce
(*blue* a lon)
burp khon bá kăn ce
bury hni ton a tè ce
cave T ʔán thón
(*centipede* u sôn)
coffin ʔiŋ kǎlók wòn ce
dove khón khà̤u
elbow lǎshi ton
fall[2] ton ce
fish basket khòn kap
(*forehead* bo kón)
have fun ʔấ hmòn
hunt son ká/hã ce
larynx khon bá sì
light fire bì hlón we à
middle nám kon kon hniá
mouth bam fòn
nipple lon sì
noon hǐ kon ă
partridge hi̯a jon
pound thon ce
poisoned ton sàn
(*reunite* tsón lăng lau)
round ʔấ bón
sell[2] kòn ce
socks T thon tǐn
spear con
spoon T cŏn
shrimp lon thàt

-on (continued)

smoke kòn é sə̌
stand con ɲí?
stick (v) ʔɑ́ lòn
stick (n) con kón
stomach (cf. *belly*)
sugarcane pòn cháu̯
village khon
vulture cán bàn hní kón
water carrier jon
(*weak* pòn nè)

-iɲ

(*collar* linh kòng)
(*cook* minh yè)
fingernail lə̌shìɲ
full ʔɑ́ piɲ
(*headman* khòng sinh)
(*king* ɑ(n)dɑ̀y ɑ sinh)
(*lead* tsính)
roast píɲ ce
(*narrow* ɑ lình)
skirt dìɲ kà
spinach siɲ phà
throat ʔɑ́ liɲ
(*wrist* là lǐnh)(lə̌kɔ)

-eɲ, -uɲ

sing leɲ ce
country ʔɑ́ hmúɲ

-ɑɲ (secondary)

bellows pi̯áŋ hùt
top (toy)[2] hmə khɑɲ T

-iŋ (secondary)

coffin ʔiŋ kə̌lók wòn ce
goose kɑp líŋ cèn
silk ciŋ kú

-ɨŋ, -əŋ, -ɔŋ (secondary)

half T khɨ́ŋ
one (cit) T nɨŋ
(*flat* tɑ́ k̟iɑ́ lɨ́ŋ)
thing[2] ʔɑ́ kèŋ khə cə
call[3] hɔ́ŋ
two (cit) T sə̌ŋ

-ɑ̃

(*adultery* cɔ̀ lɑ̀ng p'iêp lɑ́ng)
afternoon shɑ́
(*amuse self* gɑ(n) nù)
animal sɑ̃ kɑ́ jà
appear hnɑ́ tè
bamboo ɦɑ̀
barn cɑ̃
belt sɑ́i̯ hi̯ɑ́
blue hjɑ́ dɑ
boar wê thɑ̃
brave ʔɑ́ hjɑ́ hĭ
breast lɑ̃ sì
bridge ti hnɑ̃ ce
bright tsɑ̀ng-è
candle bə̌shɑ́
carry (head) chɑ́ ce
cattle ʒò hmi̯ɑ̃
chair tɑ̃ kú
chest ʔɑ́ jɑ́
clean ʔɑ́ shɑ́ (p'iu-chê-ɑng)
conversation lom hnɑ́ ɲí?
cooked rice ɦɑ̀
cooking pot bə̌ khu̯ɑ́ T
copper tɑ́ hné
cowrie cí lɑ̃ kàp
cry[2] hɑ̃ ce
cup T kɑ̀ ké̯ɔ̯
deaf lə̌pɑ̀
defecate ʔĭ kɑ́ ce
(*divide* put lə̌ng)
(*divorce* càng lɑ̀ng)
drink tɑ́ sə̀
(*earrings* nà wɔ̯ɑ̀ng)
earth hmí tɑ̃
elder[2] jə̌mɑ̀
fan bə̌pi̯ɑ́
false m̀ tɑ̃
fast ʔɑ́ tè wà jɑ̃
fight tì hnɑ̃ ce
(*fight* tì lə̌ng pat lə̌ng)
finger lə̌hjɑ́
fish jɑ̃ te
five ʔɑ̀
flat[1] tɑ́ k̟i̯ɑ́ lɨ́ŋ
flea tɑ̃ ɦə̌n
(*flee* p'ə̌ng yè)
(*flesh* à mɑ́(nasal))
forehead bə̌tɑ́ ʃe?
(*formerly* nì chàng)
friend ʔɑ́ chɑ̀
ginger hɲɑ́ sì
green ʔɑ́ hjɑ́
(*hard-working* tsɑ́ng k'hɑ)
have ʔɑ́ cɑ́
he jɑ̀
(*hemp* khiàng khə̀n)
hot ʔɑ́ hlɑ́
house[2] cɑ́
hunt son kɑ́ hɑ̃ ce
incline ʔɑ́ phi̯ɑ̃
inside thɑ́ ə?
(*join* nhə̀ng lə̌ng yè)
lamp bə̌tɑ̃
lift chì jò mɑ̃ biò
listen hnɑ́ ce
light (weight) ʔɑ́ jɑ́ jà?
live[2] hnɑ́ cè ɲí?

-ã (continued)

meet phòm hmi̯ã ce
(mix piat lăng yề)
nation khã bá wá
new[2] ʔấ jã
night khə thầ
nose lăkấ
nostril lăkấ thẳ
now hnấ mèʔ
once khấ thăcấ
onion[2] kù phã sì
open phã ɲíʔ
foreign fărấ T
patch ʔấ tấ tã ce
person shấ
plow lấ tầ sə ce
poor jà ʔe jầ
pot T bŏkhu̯ã
prison kəlã
proud ʔấ hjầ căn
push (wood in fire) hnấ ɲíʔ
quarrel jà hnã ce
question sătã hnấ sèʔ
(rainbow lấ tấ hyấ)
rest hnẳ ce
(reunite tsón lăng lau)
(rich hăng)
roof júm mấ
satisfied ʔấ tã bɔ já
scale dá cấ
sell hjấ
shield kấ sèʔ
sink lấ tã ce
yl hnấ jà
sneeze shã ce
(spinning stick ông(n)cáng yề)
spoiled ʔấ ʔấ
stab ʔấ jã thẽ ce
stir sấ
they kháu̯ che hã
(throw hiàng)
(X time thàng)
toad khan khã
tone /word sătã
turtle tã khɬ
true jấ tã ce
upper side hmi̯ầ
verb prefix, noun prefix ʔấ
(verb part.) lăng
(wait tăng gi bằn)
water lấ
weep hã ce
(weigh chăng)
you nấ
yawn jùp sà kấ ce

-ĩ (allophonic → phonological owing to secondary system)

brave ʔấ hjấ ʔấ hĩ
broad ʔấ tĩ́
excrement ʔĩ́
expensive T ʔấ pĩ́
flat[2] ʔấ lĩ́
flower hĩ wat
full (moon) thĩ ce
(water) jug lấ tĩ́
Meo mĩ́ bà
noon hĩ kon ă
(offer nì(n))
(slow mieng ă è)
strength ʔấ hĩ

-ẽ (allophonic → phonological owing to secondary system)

airplane T jẽ hủ
clench (fist) ku̯ế ce
cord[1] hnẽ jáu̯ʔ
(bed têng chòng)
give pẽ ce
pickle (v) ʔấ chế hnò ɲíʔ
pierce thế ce
(skirt tèng pì)
(strong hèng ghề)

-ɬ (allophonic → phonological owing to secondary system)

(crest cừng the)
ten (cit) wɬ́
ten thousand mɬ́, hmɬ́ T
(sing to lo mưng)
hair sam khɬ
meat căkɬ
(thread khưng sụ)
yam hmɬ́

-ũ (secondary)

ascend phià hnũ
airplane jẽ hủ
(dirty tsào k'hùng k'hùng u è)
flag T tủ
(husk rice cô thùng p'íu khầu)

-õ

boat lố
yB hnố jà
(in law a sồng)
(bed têng chòng)
(burn bì lồng)
(change clothes a tsòng p'ắc)
clothing hlat số
(collar linh kòng)
(cry ung yề)
dumb cõ
(forest tchồng kồng)
(forest fire bì lông pià)
(hat tu tchồng)
horse mồ

-õ (continued)

(*house on posts*	téng mống)	(*pot*	ù lồng)	(*they*	ồng lăng yệ)
husband	ʔấ mị̃õ	(*scrawny*	hi-ông è)	(*umbrella*	chòng)
(*panther*	tchà là pam pông thù)	*spider*	pố bà	(*village chief*	khồng si nh)
pants	hluả hmo	(*spinning stick*	ông(n)cáng yề)	verb part.	hnỗ
(*pound*	thồng)	(*stool*	tồng khu)	*wing*	ʔấ tố
		(*suit*	à tsồng)		

APPENDIX: Counting

The citation forms used in counting by my informant are very different from numbers used in context, and also from the counting numbers that Roux was given. From *one* to *ten*, *seven*, *eight* and *nine* in the Roux list are from some Dai language; otherwise, the numbers appear to be regularly derived from *Loloish roots. In my data, on the other hand, *one* to *four* are from Dai; *five* and *six* look Tibeto-Burman, but do not show regular Phunoi correspondences with *Loloish; *seven* and *eight* are from Vietnamese; and *nine* and *ten* are from some source unknown to me. In context, *one* to *three* at least are from *Loloish in my data.

Roux (1923)	Bradley (1972)	in context (1972)
(thì lùm)	nɨŋ	thə-
(ni lùm)	sɔ̆ŋ	hnə-
(sum lùm)	săm	sàm
(hal lùm)	sì	(cf. *square*)
(ngà lùm)	ʔă	
(khô lùm)	khà	
(chết lùm)	bi̯ò (bảy)	
(pét lùm)	tám (tám)	
(cău lùm)	tè	
(thì (t)tsê)	wɨ̀	

In addition to Ly/Lao/Thai and Vietnamese, the Phunoi may have been in contact with other Tibeto-Burmans (Akha and Burmans); with mountain Mon-Khmer (Khmu? and possibly others); with Miao-Yao, and certainly with Chinese (southwestern Mandarin). There are some words in Bisoid, such as *duck* and *lung*, which do not occur to my knowledge outside Bisoid, but are perfectly regular within it; perhaps these are early borrowings into Bisoid.

N O T E S

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2. Hall 1964, Roux 1924; conjectures my own.

3. Adams, McCoy article p.76.

4. Aymé, p.77.

5. Adams, McCoy article p.89-91.

6. Aymé, p.87.

7. Adams, McCoy article p.83.

8. Aymé, p.88-89.

9. Adams passim: articles by Feingold, McCoy.

10. Martinet 1955.

11. Contrary to my initial finding, reported in Matisoff 1973.

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